WADE-8079

Mini-ITX Board

User's Manual

Version 1.1

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How to Use This Manual

The manual describes how to configure your WADE-8079 system board to meet various operating requirements. It is divided into five chapters, with each chapter addressing a basic concept and operation of Single Host Board.

Chapter 1: System Overview. Presents what you have in the box and give you an overview of the product specifications and basic system architecture for this series model of single host board.

Chapter 2: Hardware Configuration. Show the definitions and locations of Jumpers and Connectors that you can easily configure your system.

Chapter 3: System Installation. Describes how to properly mount the CPU, main memory and Compact Flash to get a safe installation and provides a programming guide of Watch Dog Timer function.

Chapter 4: BIOS Setup Information. Specifies the meaning of each setup parameters, how to get advanced BIOS performance and update new BIOS. In addition, POST checkpoint list will give users some guidelines of trouble-shooting.

Chapter 5: Troubleshooting. Provide various of useful tips to quickly get WADE-8079 running with success. As basic hardware installation has been addressed in Chapter 3, this chapter will basically focus on system integration issues, in terms of backplane setup, BIOS setting, and OS diagnostics.

The content of this manual is subject to change without prior notice. These changes will be incorporated in new editions of the document. The vendor may make supplement or change in the products described in this document at any time.

Chapter 1
System Overview

1.1 Introduction

Powell Inc., a world-leading innovator in the Industrial PC (IPC) market and a member of the Intel® Communications Alliance, has launched its new WADE-8079 series in response to market demand for a simplified embedded system board (ESB)that combines a smaller footprint, lower power consumption, robust computing power and with longevity support.

Built with Intel's latest chipset, WADE-8079 series take advantage of the Intel® Atom™ Valleyview E38XX series and Intel® Celeron® J1900 processors.

WADE-8079 has lots of features, also features Two SATA connectors (SATA 3Gb/s) storage specification(Switch with mini-PCIe slot) , Two DDR3 SO-DIMM memory slot for DDR3L non-ECC SDRAM up to 8GB, support total 5 USB ports (1x USB3.0 and 2x USB2.0 on REAR I/O, 2x USB2.0 on board header), VGA / DVI / DP / LVDS display ,Dual Gigabit Ethernet, and one PCIe x1 slot .

WADE-8079's ability to drive two displays simultaneously makes them particularly suitable for lottery and gaming applications. They are also ideal for applications such as point-of-sale (POS), digital signage, kiosks, Panel PC

1.2 Check List

The WADE-8079 package should cover the following basic items

- ✓ One WADE-8079 Mini-ITX Main Board
- ✓ One SATA Cable
- ✓ One I/O Shield bracket
- ✓ One Installation Resources CD-Title

If any of these items is damaged or missing, please contact your vendor and keep all packing materials for future replacement and maintenance.

1.3 Product Specification

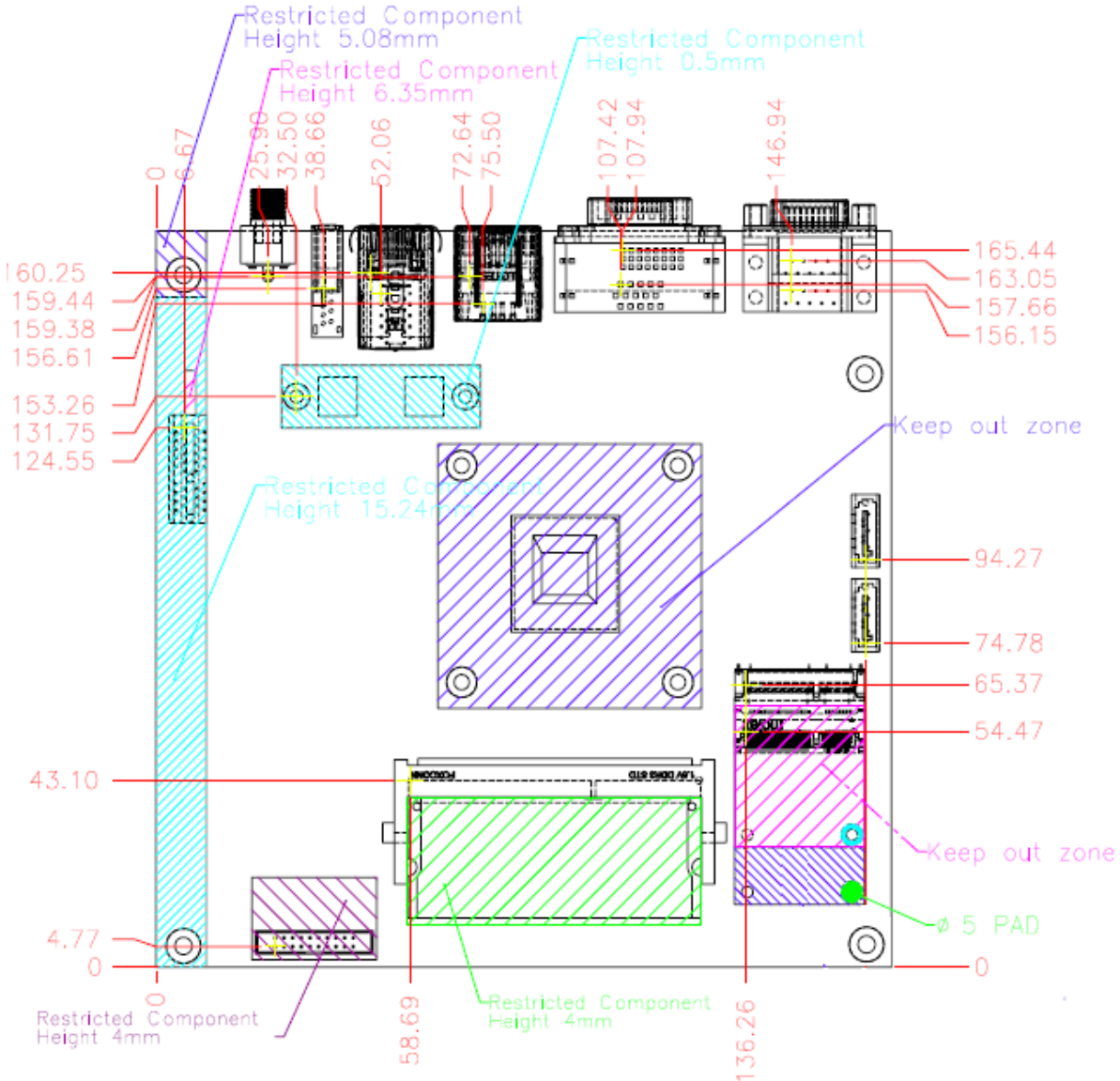
- Main Processor
  -Intel® Atom™ Valleyview E38XX series processor
  -Intel® Celeron® J1900 processor.
- System BIOS
  Phoenix BIOS
- Main Memory
  Two 204 - pin DDR3 SODIMM socket support DDR3L up to 8GB 1066/1333 MHz non-ECC memory
  - E3845 / E3827 /J1900 support 1333MHz memory
  - E3826 / E3825 / E3815 support 1066MHz memory
- Expansion Interface
  One PCIex1 slot
- SATA Interface
  Two SATA ports(SATA 3Gb), Switch with full size mini-PCIe slot
- Serial Port
  Support three RS232 / one RS232/422/485
- USB Interface
  Support five USB (Universal Serial Bus) ports, one USB3.0 and two USB2.0 on rear I/O and two USB2.0 on board header for internal devices
- Audio Interface
  Line in / Line out / Mic in on board header
- Real Time Clock/Calendar (RTC)
  Support Y2K Real Time Clock/Calendar
- Watch Dog Timer
  - Support WDT function through software programming for enable/disable and interval setting
  - General system reset
- On-board Ethernet LAN
  One Gigabit Ethernet (10/100/1000 Mbits/sec) LAN ports
- High Drive GPIO
  One pin-header for 8 bit GPIO
- System Monitoring Feature
  Monitor system temperature and major power sources.
- Outline Dimension (L x W)
  170mm(6.69'') x 170mm(6.69'')
- Power Requirements

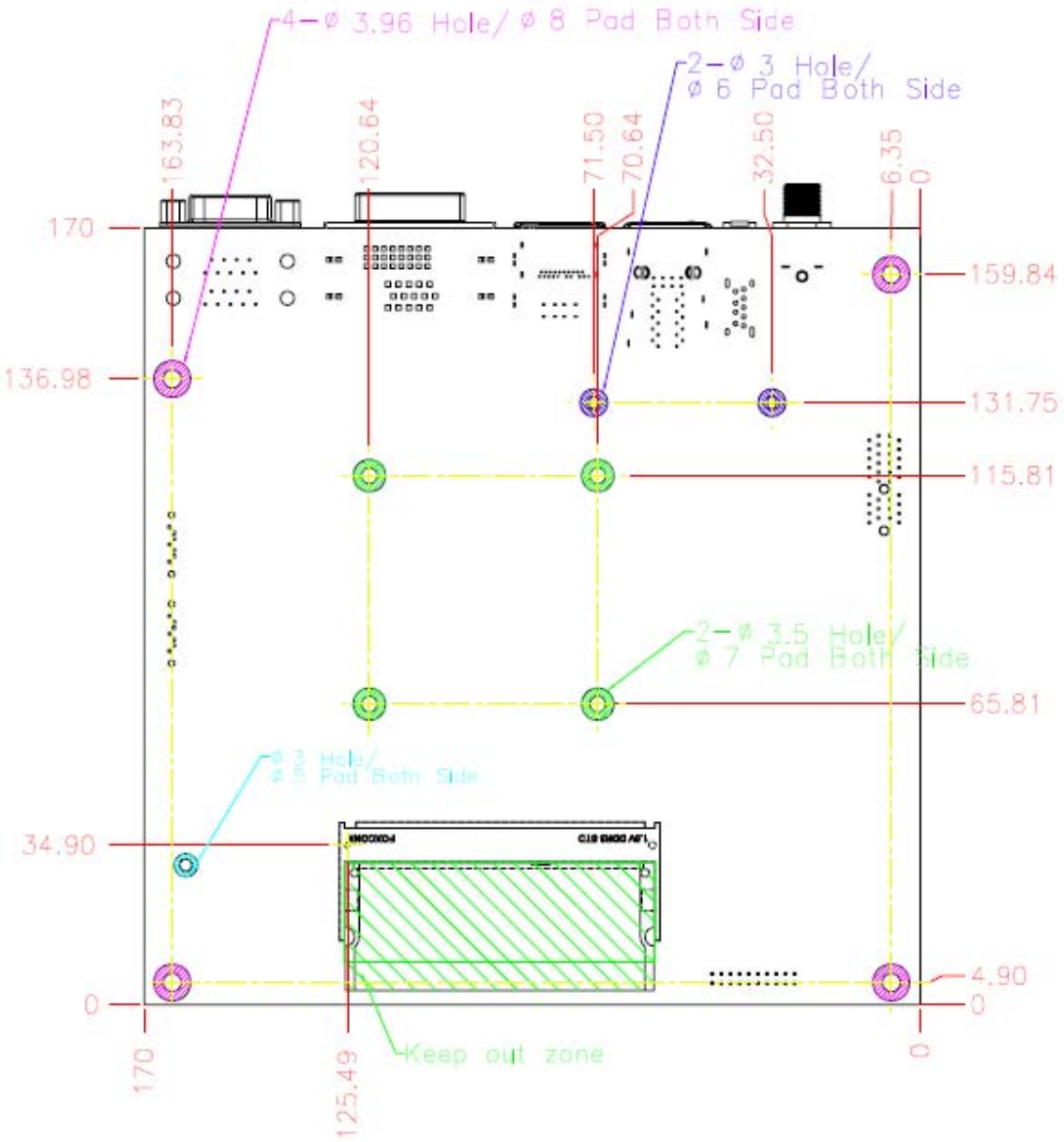
- Configuration

CPU Type	Intel® Atom™ CPU E3845 @1.9GHz L2:2048K
SBC BIOS	40411T00
Memory	WARIS DDR3L SO-DIMM 1333 1.35V 4GB*2(hynix H5TC2G83EFR)
VGA Card	Onboard Intel® Atom™ Processor E3800 Series/Intel® Celeron®
VGA Driver	Intel® Atom™ Processor E3800 Series/Intel® Celeron® Processor
LAN Card	Onboard Intel® I210 Gigabit Network
LAN Driver	Intel® I210 Gigabit Network Version：12.7.28.0
LAN Card #2	Onboard Intel® I210 Gigabit Network#2
LAN Driver #2	Intel® I210 Gigabit Network#2 Version：12.7.28.0
Audio Card	Onboard Realtek ALC892 High Definition Audio
Audio Driver	Realtek ALC892 High Definition Audio Version：6.0.1.7083
Chipset Driver	Intel® Chipset Device Software Version：10.0
SATA HDD	WD WD1002FAEX 1TB
DVDROM	LITEON iHAS324 DVD-ROM
Power Supply	Seasonic SSA-0651-1 DC12V

- Operating Temperature
  0 °C ~ 60 °C
- Storage temperature
  -20 ~ 80 °C
- Relative Humidity
  0% ~ 90%, non-condensing

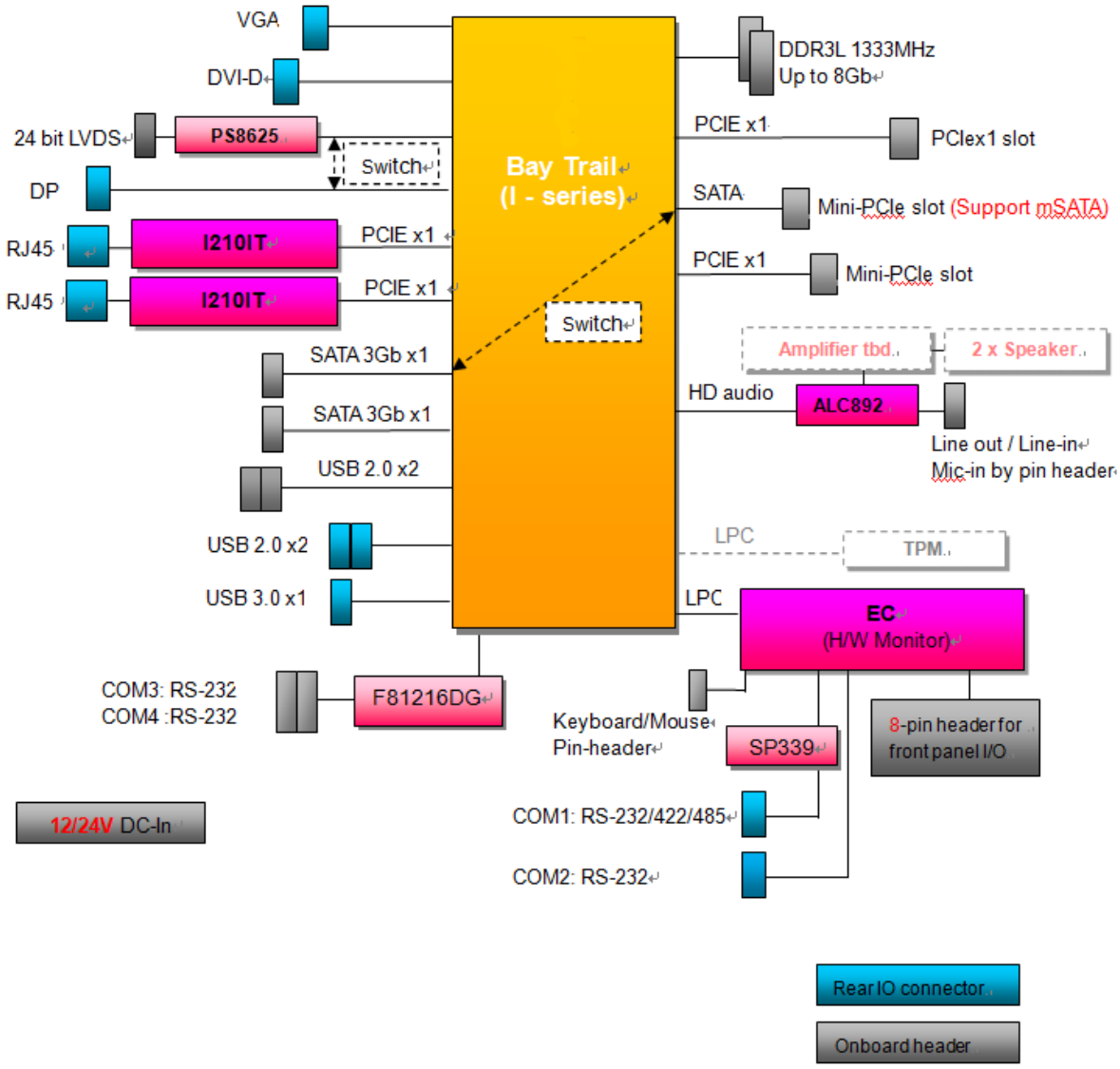
1.3.1 Mechanical Drawing




4-ø 3.96 Hole/ ø 8 Pad Both Side
2-ø 3 Hole/
ø 6 Pad Both Side
163.83
120.64
71.50
70.64
32.50
6.35
0
170
159.84
136.98
131.75
115.81
2-ø 3.5 Hole/
ø 7 Pad Both Side
65.81
ø 3 Hole/
ø 5 Pad Both Side
34.90
4.90
0
0
170
125.49
Keep out zone
0

1.4 System Architecture

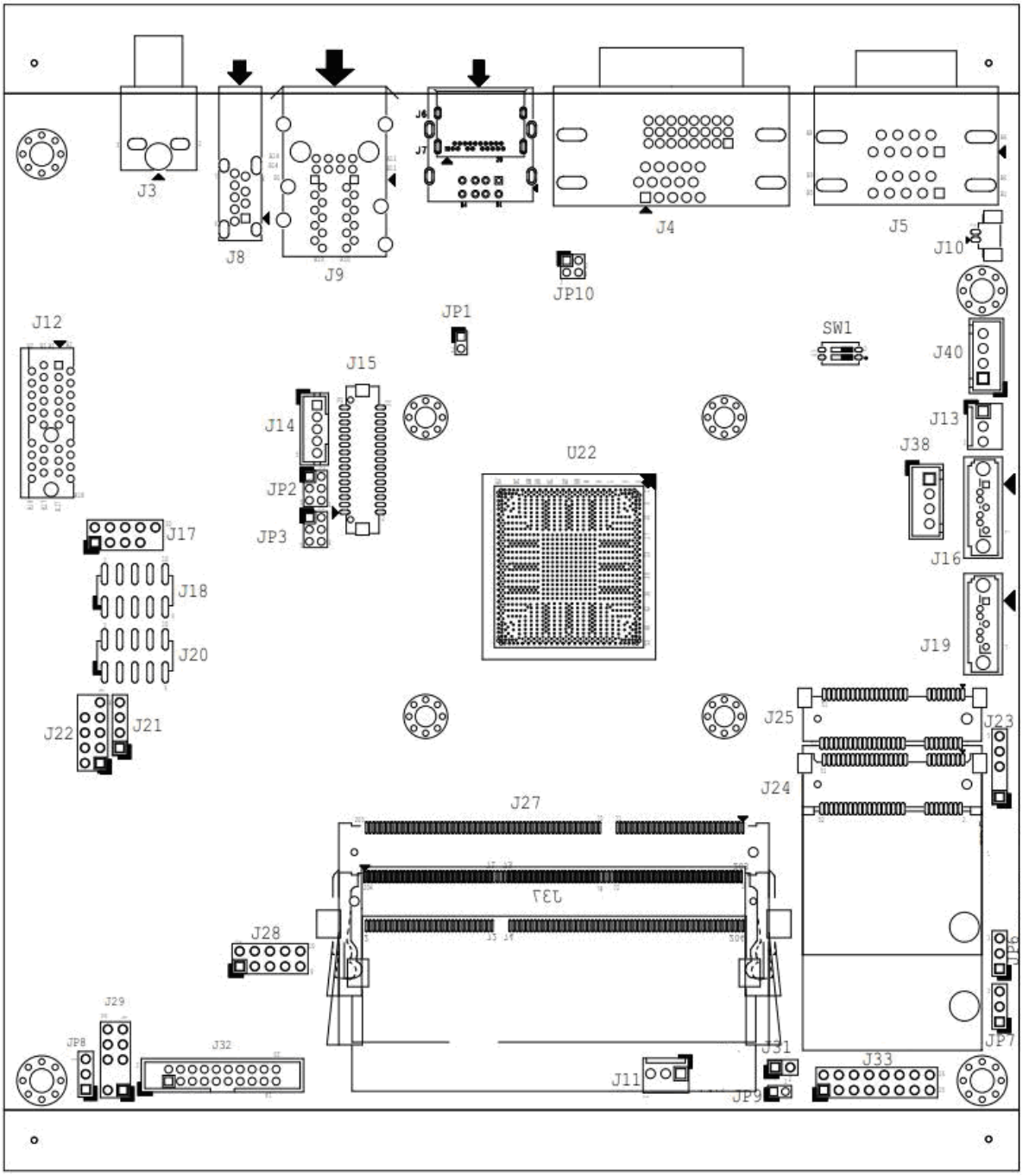
All of details operating relations are shown in WADE-8079 System Block Diagram.



WADE-8079 System Block Diagram

Chapter 2
Hardware Configuration

This chapter indicates jumpers', headers' and CONNECTORs' locations. Users may find useful information related to hardware settings in this chapter.



The jumper settings are schematically depicted in this manual as follows:

2.1 Jumper Allocation

SW1: BIOS recover Switch

PIN NO.		Function
1-4	2-3	
OFF	OFF	Normal Operation ★
ON	OFF	AT Mode
OFF	ON	BIOS recover

JP1: LVDS Channel Link Pin Header

JP1	Function
1-2 Short	Dual Link LVDS ★
1-2 Open	Single Link LVDS

JP2: LVDS Backlight Enable Pin Header

JP2	Function
1-3,2-4 Short	5V, Active High(Normal) ★
1-3,4-6 Short	12V, Active High
3-5,2-4 Short	5V, Active Low
3-5,4-6 Short	12V, Active Low

JP3: LVDS VDD Pin Header

JP3	Function
1-3 Short	3.3V ★
3-5 Short	5V
3-4 Short	+12V

JP10: LVDS color depth and data mapping Pin Header

JP10	Function
2-4 Short	8-bit LVDS, VESA mapping ★
1-3 Short	6-bit LVDS, both VESA and JEIDA mapping
1-3,2-4 Short	8-bit LVDS, JEIDA mapping

JP6: CMOS Clear Pin Header

JP6	Function
1-2 Short	Normal Operation ★
2-3 Short	Clear CMOS Contents

JP7: SATA / mSATA Selection Pin Header (J16 / J25 Selection)

JP7	Function
1-2 Short	mSATA
2-3 Short	SATA ★

JP8: GPIO VDD Pin Header

JP8	Function
1-2 Short	5V ★
2-3 Short	3.3V

JP9: Watchdog Timer Function Pin Header

JP9	Function
1-2 Short	Normal Operation ★
1-2 Open	WDT Disable

*Note1: Dual display mode switch for LVDS and DP. When the user change the display mode on BIOS item, the system need to be full reset again.

*Note2: COM1 could be set to RS-232, RS-422, RS-485 via BIOS Setup Item.

2.2 Connector Allocation

I/O peripheral devices are connected to the interface connectors.

Connector Function List

Connector	Function	Remark
J3	12/24V DC Jack	
J4	DVI-D+VGA Connector	
J5	COM1 & COM2 Connector	
J6	DP Connector	
J7	USB2.0 X2 Connector	
J8	USB3.0 Connector	
J9	LAN X2 Connector	
J10	Battery Connector	
J11	System Fan Connector	
J12	PCI-E X1 Slot	
J13	CPU Fan Connector	
J14	Backlight Power Connector	
J15	LVDS Connector	
J16	SATA Connector	
J17	USB2.0 X2 Pin Header	
J18	COM4 Pin Header	
J19	SATA Connector	
J20	COM3 Pin Header	
J21	Speaker Pin Header	
J22	Audio Pin Header	
J23	SM Bus Pin Header	
J24	Mini-PCI-E Connector	
J25	mSATA Connector	
J27	DDR3L SODIMM0 Socket	
J28	8-bit GPIO Pin Header	
J29	KB/MS PS2 Pin Header	
J31	WDT LED Pin Header	
J32	TPM Connector	
J33	Front Panel Pin Header	
J37	DDR3L SODIMM1 Socket	
J38,J40	SATA Power Connector	

Pin Assignments of Connectors

J3: 12/24V DC Jack

PIN No.	Signal Description	PIN No.	Signal Description
1	+12/24V	2	Ground
3	Ground		

J4A: DVI-D Connector

PIN No.	Signal Description	PIN No.	Signal Description
1	TMDS Data 2-	2	TMDS Data 2+
3	TMDS Data 2/4 Shield	4	TMDS Data 4-
5	TMDS Data 4+	6	DDC clock
7	DDC data	8	NC
9	TMDS Data 1-	10	TMDS Data 1+
11	TMDS Data 1/3 Shield	12	TMDS Data 3-
13	TMDS Data 3+	14	+5V
15	GND	16	Hot Plug Detect
17	TMDS Data 0-	18	TMDS Data 0+
19	TMDS Data 0/5 Shield	20	TMDS Data 5-
21	TMDS Data 5+	22	TMDS Clock Shield
23	TMDS Clock+	24	TMDS Clock-
CG1	CG1	CG2	CG2

J4B: VGA Connector

PIN No.	Signal Description	PIN No.	Signal Description
1	Red	2	Green
3	Blue	4	NC
5	GND	6	RGND
7	GGND	8	BGND
9	KEY(+5V)	10	SGND
11	NC	12	SDA
13	H Sync	14	V Sync
15	SCL	16	

J5A: COM1 CONNECTOR

PIN No.	Signal Description	PIN No.	Signal Description
1	DCD#1/485D/422T-	2	RXD#1/485D/422T+
3	TXD#1/422R+	4	DTR#1/422R-
5	GND	6	DSR#1
7	RTS#1	8	CTS#1
9	RI#1		

J5B: COM2 CONNECTOR

PIN No.	Signal Description	PIN No.	Signal Description
1	DCD#2	2	RXD#2
3	TXD#2	4	DTR#2
5	GND	6	DSR#2
7	RTS#2	8	CTS#2
9	RI#2		

J6: DP Connector

PIN No.	Signal Description	PIN No.	Signal Description
1	ML_Lane 0 (p)	2	GND
3	ML_Lane 0 (n)	4	ML_Lane 1 (p)
5	GND	6	ML_Lane 1 (n)
7	ML_Lane 2 (p)	8	GND
9	ML_Lane 2 (n)	10	ML_Lane 3 (p)
11	GND	12	ML_Lane 3 (n)
13	GND	14	GND
15	AUX CH (p)	16	GND
17	AUX CH (n)	18	Hot Plug Detect
19	GND	20	DP_PWR(+3.3V)

J7: USB2.0 X2 Connector

PIN No.	Signal Description	PIN No.	Signal Description
A1	+5V	B1	+5V
A2	D-	B2	D-
A3	D+	B3	D+
A4	GND	B4	GND
CG1	GND	CG2	GND
CG3	GND	CG4	GND

J8: USB3.0 Connector

PIN No.	Signal Description
1	+5V
2	D-
3	D+
4	GND
5	SSRX-
6	SSRX+
7	GND
8	SSRT-
9	SSRT+

J10: Battery Connector

Pin No.	Signal Description
1	+3.3V
2	GND

J11: System Fan Connector

Pin No.	Signal Description
1	GND
2	PWM_CONTROL
3	SENSE

J13: CPU Fan Connector

Pin No.	Signal Description
1	GND
2	PWM_CONTROL
3	SENSE

J14: Backlight Power Connector

Pin No.	Signal Description
1	+5V
2	Brightness control
3	+12V
4	GND
5	+5V(Enable pin from JP2)

J15: LVDS CONNECTOR

Pin No.	Signal Description	Pin No.	Signal Description
2	VDD_LVDS	1	VDD_LVDS
4	LCD1DO0-	3	LCD1DO0+
6	LCD1DO1-	5	LCD1DO1+
8	LCD1DO2-	7	LCD1DO2+
10	LCD1DO3-	9	LCD1DO3+
12	LCD1CLK-	11	LCD1CLK+
14	LDATA1	13	LCLK1
16	GND	15	GND
18	LCD2DO0-	17	LCD2DO0+
20	LCD2DO1-	19	LCD2DO1+
22	LCD2DO2-	21	LCD2DO2+
24	LCD2DO3-	23	LCD2DO3+
26	LCD2CLK-	25	LCD2CLK+
28	NC	27	NC
30	GND	29	GND

J17: USB2.0 X2 Pin Header

PIN No.	Signal Description	PIN No.	Signal Description
1	USB power (5V)	2	USB power (5V)
3	USB DATA A-	4	USB DATA A-
5	USB DATA A+	6	USB DATA A+
7	GND	8	GND
9	KEY	10	KEY

J18: COM4 Pin Header

PIN No.	Signal Description	PIN No.	Signal Description
1	Data Carrier Detect	2	Receive Data
3	Transmit Data	4	Data Terminal Ready
5	GND	6	Data Set Ready
7	Request To Send	8	Clear To Send
9	Ring Indicator	10	NC

J20: COM3 Pin Header

PIN No.	Signal Description	PIN No.	Signal Description
1	Data Carrier Detect	2	Receive Data
3	Transmit Data	4	Data Terminal Ready
5	GND	6	Data Set Ready
7	Request To Send	8	Clear To Send
9	Ring Indicator	10	NC

J21: Speaker Pin Header

Pin No.	Signal Description
1	AMP_R+
2	AMP_R-
3	AMP_L-
4	AMP_L+

J22: Audio Pin Header

PIN No.	Signal Description	PIN No.	Signal Description
1	MIC with Reference Voltage	2	Analog Ground
3	Line-in Left Channel	4	Analog Ground
5	Line-in Right Channel	6	Analog Ground
7	Line-out Left Channel	8	Analog Ground
9	Line-out Right Channel	10	KEY

J23: SM Bus Pin Header

Pin No.	Signal Description
1	SM Bus Clock
2	X
3	GND
4	SM Bus Data
5	+5V

J28: 8-bit GPIO Pin Header

PIN No.	Signal Description	PIN No.	Signal Description
1	GPIO00	2	GPIO04
3	GPIO01	4	GPIO05
5	GPIO02	6	GPIO06
7	GPIO03	8	GPIO07
9	GND	10	5VSB

J29: KB/MS PS2 Pin Header

PIN No.	Signal Description	PIN No.	Signal Description
1	MS_DATA	2	KB_DATA
3	NC	4	NC
5	GND	6	GND
7	+5V	8	+5V
9	MS_CLK	10	KB_CLK

J31: WDT LED Pin Header

PIN No.	Signal Description
1	+5V
2	WDT#

J32: TPM Connector

PIN No.	Signal Description	PIN No.	Signal Description
1	TPM_CLK	2	GND
3	LFRAME#	4	NC
5	TPM_RESET#	6	5V
7	LAD3	8	LAD2
9	3.3V	10	LAD1
11	LAD0	12	GND
13	SMB_CLK	14	SMB_DATA
15	3VSB	16	SERIRQ
17	GND	18	NC
19	LPCPD#	20	NC

J33: Front Panel Pin Header

PIN No.	Signal Description	PIN No.	Signal Description
1	+5V(330 ohm)	2	+5V
3	Power LED	4	GND
5	+3.3V(LAN1) (330 ohm)	6	KEY
7	LAN1_LED_LINK#/ACT#	8	BUZZER
9	LAN2_LED_LINK#/ACT#	10	GND
11	+3.3V(LAN2) (330 ohm)	12	Power Switch
13	+5V/+3.3V(330 ohm)	14	Reset Switch
15	HDD LED#	16	GND

J38,J40: SATA Power Connector

Pin No.	Signal Description
1	+12V
2	GND
3	GND
4	+5V

Chapter 3
System Installation

This chapter provides you with instructions to set up your system. The additional information is enclosed to help you set up onboard PCI device and handle Watch Dog Timer (WDT) and operation of GPIO in software programming.

3.1 Intel® Valleyview CPU

Intel® E3800 family CPU

3.2 Main Memory

WADE-8079 provides 1 x 204-pin SO-DIMM sockets which supports 1333 MHz DDR3L-SDRAM (1.35V) memory as main memory, non-ECC (non-Error Checking and Correcting). The maximum memory can be up to 8GB. Memory clock and related settings can be detected by BIOS via SPD interface.

Watch out the contact and lock integrity of memory module with socket, it will impact on the system reliability. Follow normal procedures to install memory module into memory socket. Before locking, make sure that all modules have been fully inserted into the card slots.

3.3 Installing the Single Board Computer

To install your WADE-8079 into standard chassis or proprietary environment, please perform the following:

Step 1 : Check all jumpers setting on proper position
Step 2 : Install and configure CPU and memory module on right position
Step 3 : Place WADE-8079 into the dedicated position in the system
Step 4 : Attach cables to existing peripheral devices and secure it

WARNING
Please ensure that mother board is properly inserted and fixed by mechanism.

Note:
Please refer to section 3.3.1 to 3.3.4 to install INF, Graphic, LAN and Audio drivers.

3.3.1 Chipset Component Driver

WADE-8079 uses state-of-art Intel® BayTrail-I chipset. It's a new chipset that some old operating systems might not be able to recognize. To overcome this compatibility issue, for Windows Operating Systems such as Windows 8, please install its INF before any of other Drivers are installed. You can find very easily this chipset component driver in NANO-6060 CD-title

3.3.2 Intel® HD Graphics 4600

WADE-8079 has integrated Intel® HD Graphics 4600 which supports DX-11, OpenGL-4.0. It is the most advanced design to gain an outstanding graphic performance. WADE-8079 supports VGA, DVI-D, DP and dual channel 24 bit LVDS. This combination makes WADE-8079 an excellent piece of multimedia hardware.

Drivers Support
Please find the Graphic driver in the WADE-8079 CD-title. The driver supports Windows 8.

3.3.3 Intel LAN I210IT Gigabit Ethernet Controller

Dual Intel I210IT Gigabit Ethernet controller and 2x RJ45 connectors on rear I/O.

Drivers Support
Please find Intel I210IT LAN driver in /Ethernet directory of WADE-8079 CD-title. The driver supports Windows 8.

3.3.4 Realtek ALC892 HD Audio Controller

Please find Realtek ALC892 HD Audio driver form WADE-8079 CD-title. The driver supports Windows 8.

3.4 Clear CMOS Operation

The following table indicates how to enable/disable Clear CMOS Function hardware circuit by putting jumper in the board.

JP6: CMOS Clear Pin Header

JP6	Function
1-2 Short	Normal Operation ★
2-3 Short	Clear CMOS Contents

3.5 WDT Function

```
#include <stdio.h>
#include <stdlib.h>
#include <conio.h>
#include <dos.h>

#define EC_DATA 0x62
#define EC_CMD 0x66
#define EC_CMD_READ 0x80
#define EC_CMD_WRITE 0x81

#define WDT_MODE 0x06 // WDT Select mode.
#define WDT_MIN 0x07 // Minute mode counter
#define WDT_SEC 0x08 // Second mode counter
// Use port 62 and port 66 to access EC command / data.

static int IBF_Check()
{
        unsigned char IBF_status;
        do
        {
                delay(2);
                outportb (EC_CMD, IBF_status);
        } while (IBF_status & 0x02);
        return 1;
}

static int OBF_Check ()
{
        unsigned char OBF_status;
        do
        {
                delay(2);
                OBF_status = inportb (EC_CMD);
        } while (!(OBF_status & 0x01));
        return 1;
}

static void Write_EC (unsigned char index, unsigned char data)
{
        IBF_Check ();
        outportb (EC_CMD, EC_CMD_WRITE);
        IBF_Check ();
        outportb (EC_DATA, index);
        IBF_Check ();
```

```
        outportb (EC_DATA, data);
}

static unsigned char Read_EC (unsigned char address)
{
        unsigned char data;
        IBF_Check ();
        outportb (EC_CMD, EC_CMD_READ);
        IBF_Check ();
        outportb (EC_DATA, address);
        OBF_Check();
        data = inportb (EC_DATA);
        return data;
}

void EC_WDT_Trigger ()
{
        /* WDT Counter */
        Write_EC (WDT_SEC, 0x05);
        /* if use minute mode */
        /* Write_EC (WDT_MIN, 0x05); */
        /* 0x01 is second mode */
        /* 0x03 is minute mode */
        Write_EC (WDT_MODE, 0x01);
}
//Write_EC ((b->wdt.ec.count_m_addr & 0xFF), b->wdt.ec.timeout);
//Write_EC ((b->wdt.ec.cfg_addr & 0xFF), 0x03); //WDTCFG[1:0]=11

int main ()
{
        int i;
        EC_WDT_Trigger ();
        for (i = 0; i < 5; i++)
        {
                printf ("Reset counter .....%d\n", 5 - i);
                delay (1000);
        }
        return 0;
}
```

3.6 GPIO

```
#include <stdio.h>
#include <stdlib.h>
#include <conio.h>
#include <dos.h>

#define EC_DATA 0x62
#define EC_CMD 0x66
#define EC_CMD_READ 0x80
#define EC_CMD_WRITE 0x81

#define GPIO_DIR 0x2B
#define GPIO_DATA 0x2C

static void Write_EC (unsigned char index, unsigned char data)
{
        sleep(1);
        outportb (EC_CMD, EC_CMD_WRITE);
        sleep(1);
        outportb (EC_DATA, index);
        sleep(1);
        outportb (EC_DATA, data);
}

static unsigned char Read_EC (unsigned char address)
{
        unsigned char data;
        sleep(1);
        outportb (EC_CMD, EC_CMD_READ);
        sleep(1);
        outportb (EC_DATA, address);
```

```
        sleep(1);
        data = inportb (EC_DATA);
        return data;
}

int main ()
{
        unsigned char d2;
        printf("\n\n");
        printf("WADE-8079 GPIO TEST Program v1.0\n");
        printf("Please short the following pins with 2.54mm-pitched jumper on JP8\n");
        printf("GPIO1 ---- GPIO2\n");
        printf("GPIO3 ---- GPIO4\n");
        printf("GPIO5 ---- GPIO6\n");
        printf("GPIO7 ---- GPIO8\n");
        printf("GND xxxx Vcc <==PWR/GND pins, DO NOT short them!\n\n");
        printf("LED Test Begins...\n");

        /* Set GPIO Port In/Out mode */
        Write_EC (GPIO_DIR, 0x00);
        sleep (2);
        printf("Write_EC mode 0x00\n");

        /* Set Low or High */
        Write_EC (GPIO_DATA, 0xFF);
        printf("Write_EC data 0xFF\n");
        sleep (2);

        /* Set GPIO Port In/Out mode */
        Write_EC (GPIO_DIR, 0x00);
```

```
        sleep (2);
        printf("Write_EC mode 0x00\n");

        /* Set Low or High */
        Write_EC (GPIO_DATA, 0x00);
        printf("Write_EC data 0x00\n");
        sleep (2);

        return 0;
}
```

Chapter 4
BIOS Setup Information

WADE-8079 is equipped with the Phoenix BIOS stored in Flash ROM. These BIOS has a built-in Setup program that allows users to modify the basic system configuration easily. This type of information is stored in CMOS RAM so that it is retained during power-off periods. When system is turned on, WADE-8079 communicates with peripheral devices and checks its hardware resources against the configuration information stored in the CMOS memory. If any error is detected, or the CMOS parameters need to be initially defined, the diagnostic program will prompt the user to enter the SETUP program. Some errors are significant enough to abort the start up.
.

4.1 Entering Setup - Launch System Setup

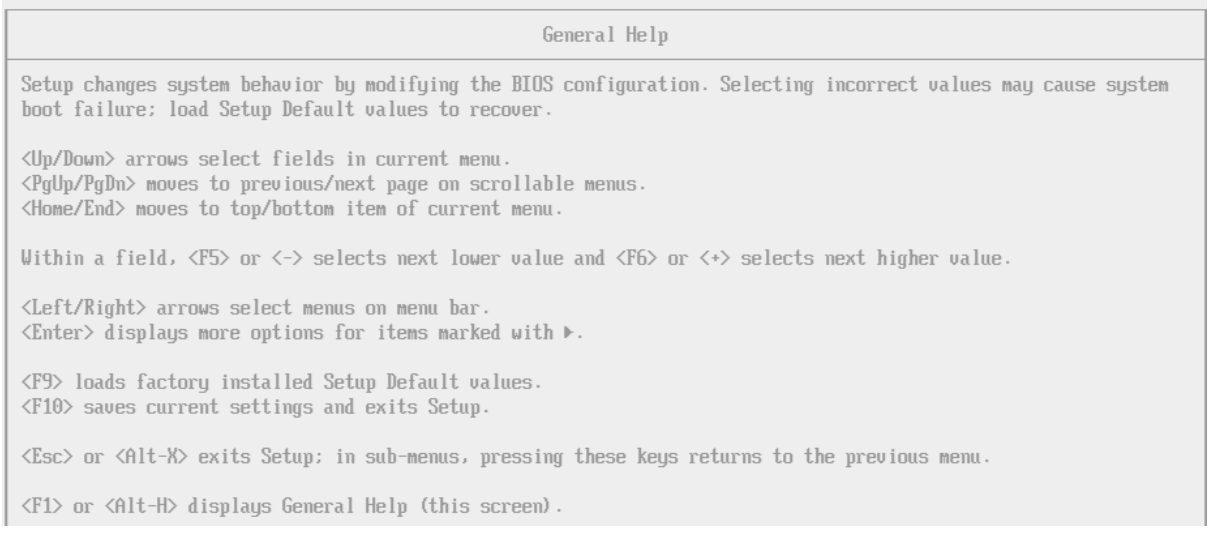
Power on the computer and the system will start POST (Power On Self Test) process. When the message below appears on the screen, press <F2> key will enter BIOS setup screen.

Press <F2> to enter SETUP

If the message disappears before responding and still wish to enter Setup, please restart the system by turning it OFF and On or pressing the RESET button. It can be also restarted by pressing <Ctrl>, <Alt>, and <Delete> keys on keyboard simultaneously.

Press <F1> to Run General Help or Resume

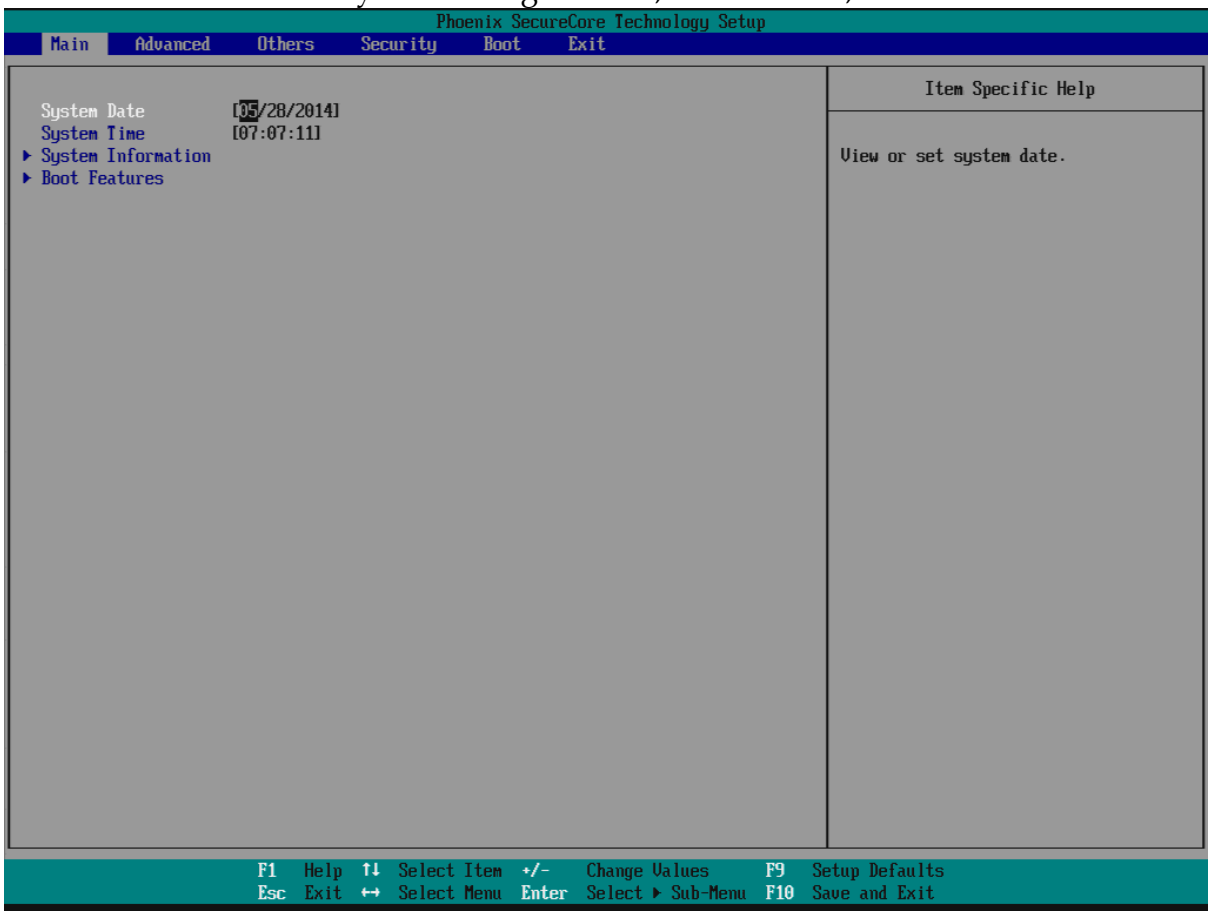
The BIOS setup program provides a General Help screen. The menu can be easily called up from any menu by pressing <F1>. The Help screen lists all the possible keys to use and the selections for the highlighted item. Press <Esc> to exit the Help screen.



4.2 Main

Main

Use this menu for basic system configurations, such as time, date etc.



System Date

View or set system date

The date format is <Day>, <Month> <Date> <Year>. Use [+] or [−] to configure system Date.

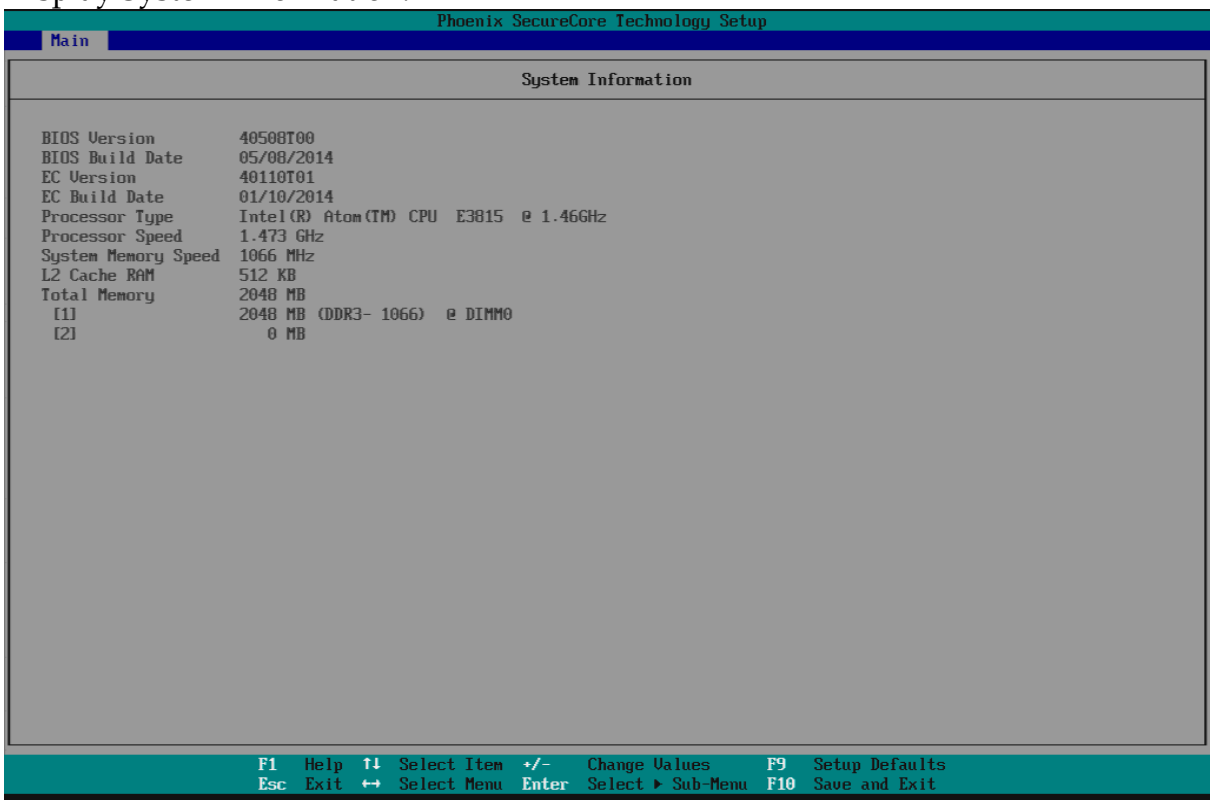
System Time

View or set system time

The time format is <Hour> <Minute> <Second>. Use [+] or [−] to configure system Time.

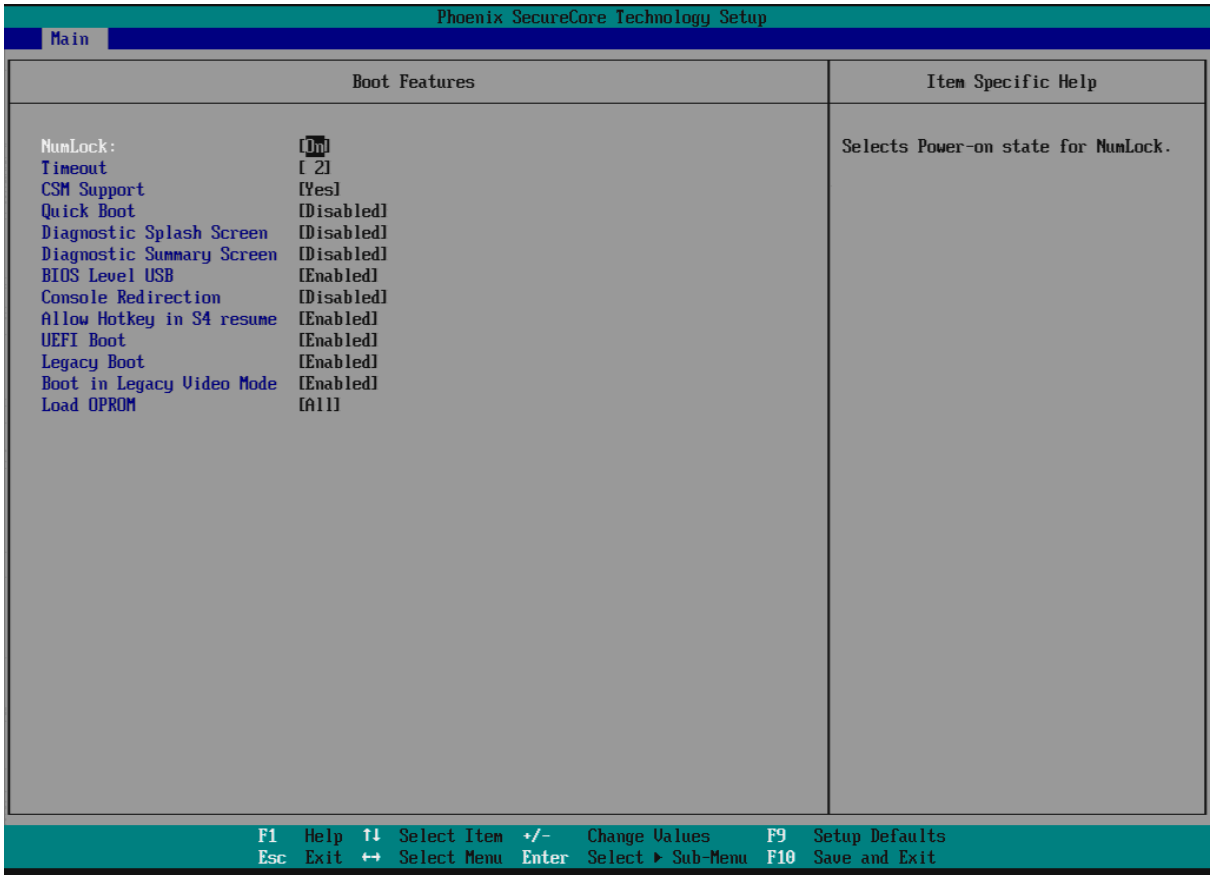
System Information

Display System Information.


Phoenix SecureCore Technology Setup
Main
System Information
BIOS Version 40508T00
BIOS Build Date 05/08/2014
EC Version 40110T01
EC Build Date 01/10/2014
Processor Type Intel(R) Atom(TM) CPU E3815 @ 1.46GHz
Processor Speed 1.473 GHz
System Memory Speed 1066 MHz
L2 Cache RAM 512 KB
Total Memory 2048 MB
[1] 2048 MB (DDR3- 1066) @ DIMM0
[2] 0 MB
F1 Help ↑↓ Select Item +/- Change Values F9 Setup Defaults
Esc Exit ↔ Select Menu Enter Select ▸ Sub-Menu F10 Save and Exit

Boot Features

Select Boot features.


Phoenix SecureCore Technology Setup
Main
Boot Features
Item Specific Help
NumLock: [On]
Timeout [2]
CSM Support [Yes]
Quick Boot [Disabled]
Diagnostic Splash Screen [Disabled]
Diagnostic Summary Screen [Disabled]
BIOS Level USB [Enabled]
Console Redirection [Disabled]
Allow Hotkey in S4 resume [Enabled]
UEFI Boot [Enabled]
Legacy Boot [Enabled]
Boot in Legacy Video Mode [Enabled]
Load OPROM [All]
Selects Power-on state for NumLock.
F1 Help ↑↓ Select Item +/- Change Values F9 Setup Defaults
Esc Exit ↔ Select Menu Enter Select ▸ Sub-Menu F10 Save and Exit

NumLock:
Selects Power-on state for NumLock
Choices: On, Off.

Timeout
Number of seconds that P.O.S.T will wait for the user input before booting
Choices: 0-99 seconds.

CSM Support
Compatibility Support Module that provide backward compatibility services for legacy BIOS services, like int10/int13, dependent OS.

Quick Boot
Enable/Disable quick boot
Choices: Disable, Enable.

Diagnostic Splash Screen
If you select 'Enabled' the diagnostic splash screen always displays during boot. If you select 'Disabled' the diagnostic splash screen does not displays unless you press HOTKEY during boot
Choices: Disable, Enable.

Diagnostic Summary Screen
Display the Diagnostic summary screen during boot
Choices: Disable, Enable.

BIOS Level USB
Enable/Disable all BIOS support for USB in order to reduce boot time. Note that this will prevent using a USB keyboard in setup or a USB biometric scanner such as a finger print reader to control access to setup, but does not prevent the operating system from supporting such hardware
Choices: Disable, Enable.

Console Redirection
Enable/Disable Universal Console Redirection
Choices: Disable, Enable.

Allow Hotkey in S4 Resume
Enable hotkey detection when system resuming from Hibernate state
Choices: Disable, Enable.

UEFI Boot
Enable the UEFI boot.
Choices: Disable, Enable.

Legacy Boot
Enable the Legacy boot
Choices: Disable, Enable.

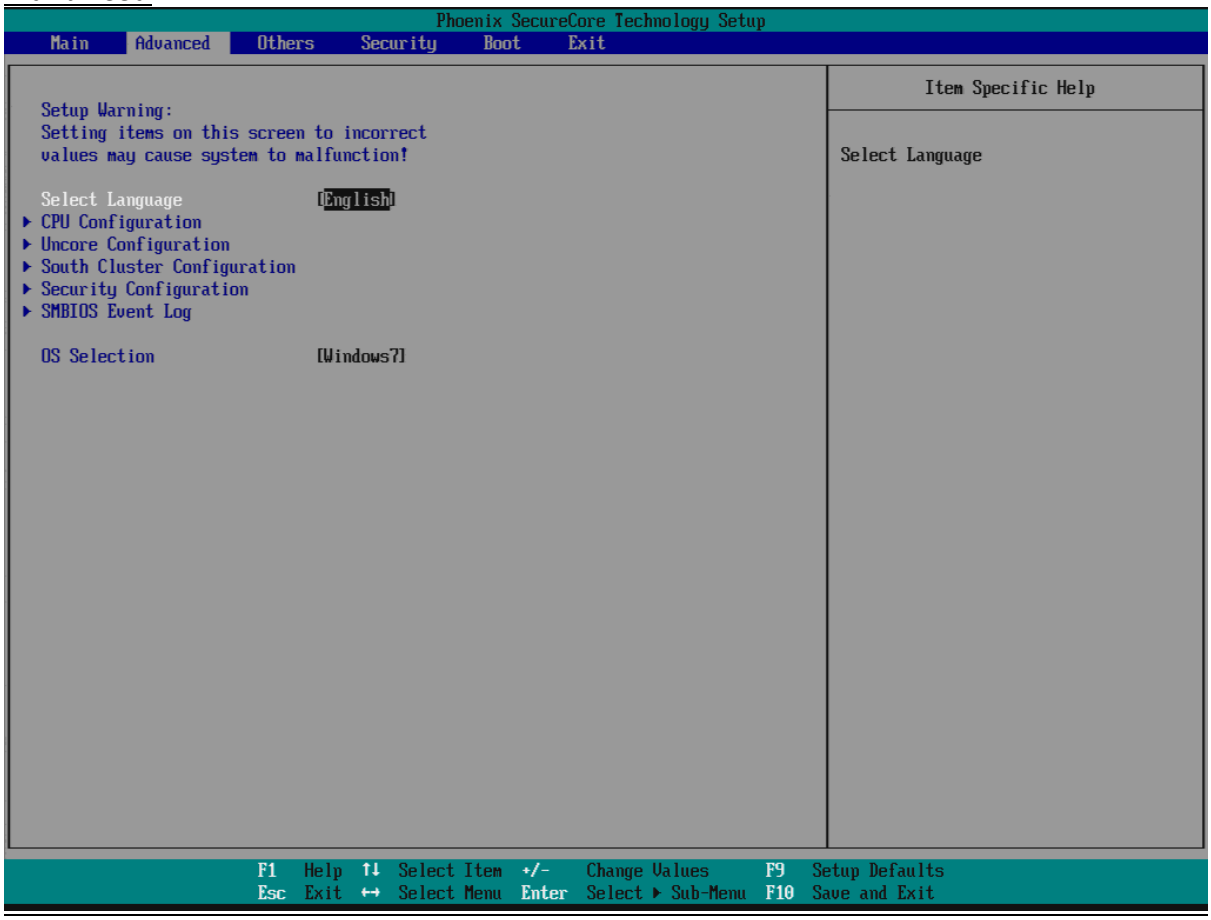
Boot in Legacy Video mode
Enable to force the display adapter to switch video mode to Text mode 3 at the end of BIOS POST for non-UEFI boot mode (Legacy boot). Some legacy software, such as DUET, requires that the BIOS explicitly enter text video mode prior to boot.
Choices: Disable, Enable.

Load OPROM
Load OPROMs or demand according to the boot device.
Choices: All, On demand.

4.3 Configuration

Setup Warning:
Setting items on this screen to incorrect values may cause system to malfunction!

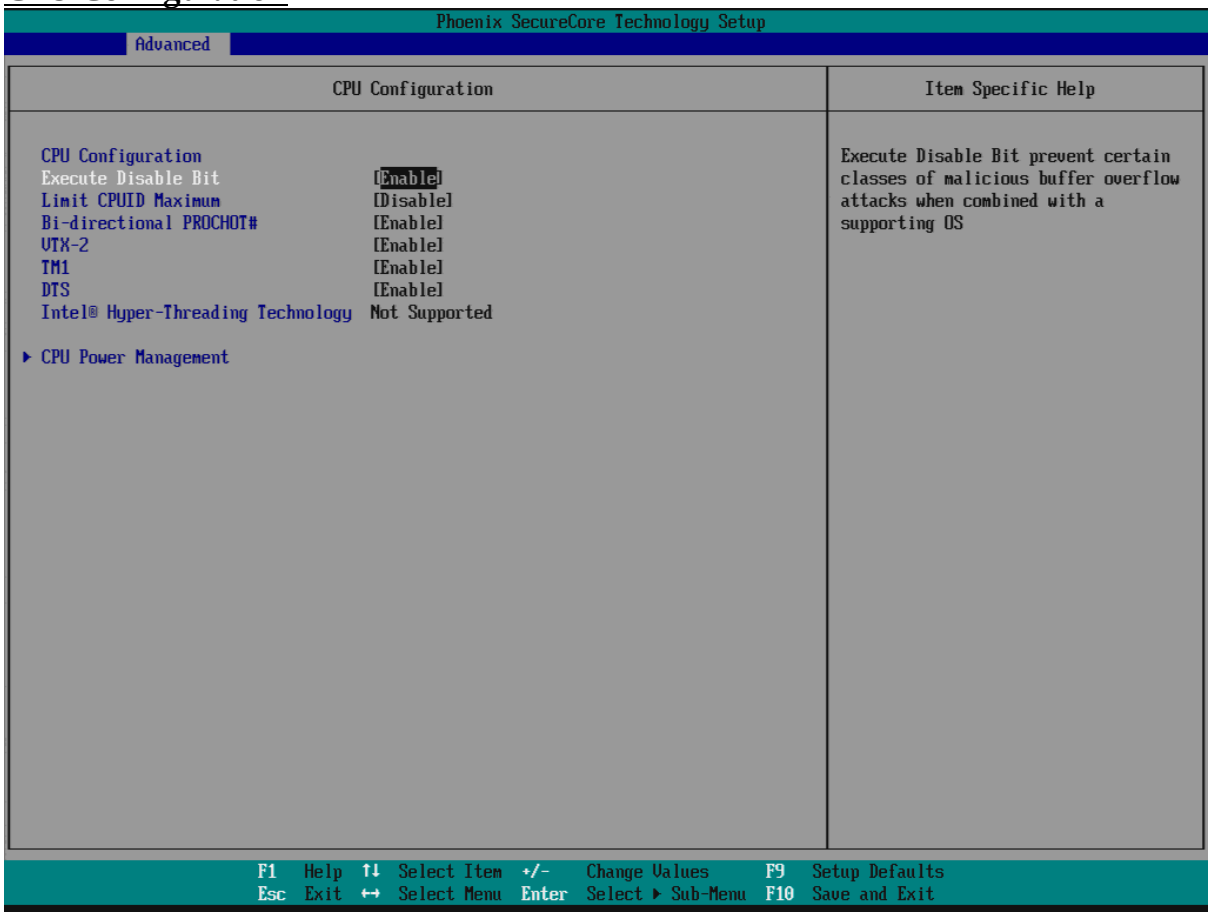
Advanced



Select Language
Select Language
Choices: English, Japanese, French, Korean, Traditional Chinese, Simplified Chinese.

OS Selection
OS Selection
Choices: Windows 8.x, Android, Windows 7.

CPU Configuration


Phoenix SecureCore Technology Setup
Advanced
CPU Configuration
Item Specific Help
CPU Configuration
Execute Disable Bit [Enable]
Limit CPUID Maximum [Disable]
Bi-directional PROCHOT# [Enable]
VTX-2 [Enable]
TM1 [Enable]
DTS [Enable]
Intel® Hyper-Threading Technology Not Supported
CPU Power Management
Execute Disable Bit prevent certain classes of malicious buffer overflow attacks when combined with a supporting OS
F1 Help ↑↓ Select Item +/- Change Values F9 Setup Defaults
Esc Exit ↔ Select Menu Enter Select ▸ Sub-Menu F10 Save and Exit

Execute Disabled Bit
Execute Disabled Bit prevent certain classes of malicious buffer overflow attacks when combined with a supporting OS
Choices: Disable, Enable.

Limit CPUID Maximum
Disabled for Windows XP
Choices: Disable, Enable.

Bi-directional PROCHOT#

When a processor thermal sensor trips (either core), the PROCHOT# will be driven
If bi-direction is enabled, external agents can drive PROCHOT# to throttle the processor
Choices: Disable, Enable.

VTX-2

To enable or disable the VTX-2 Mode support
Choices: Disable, Enable.

TM1

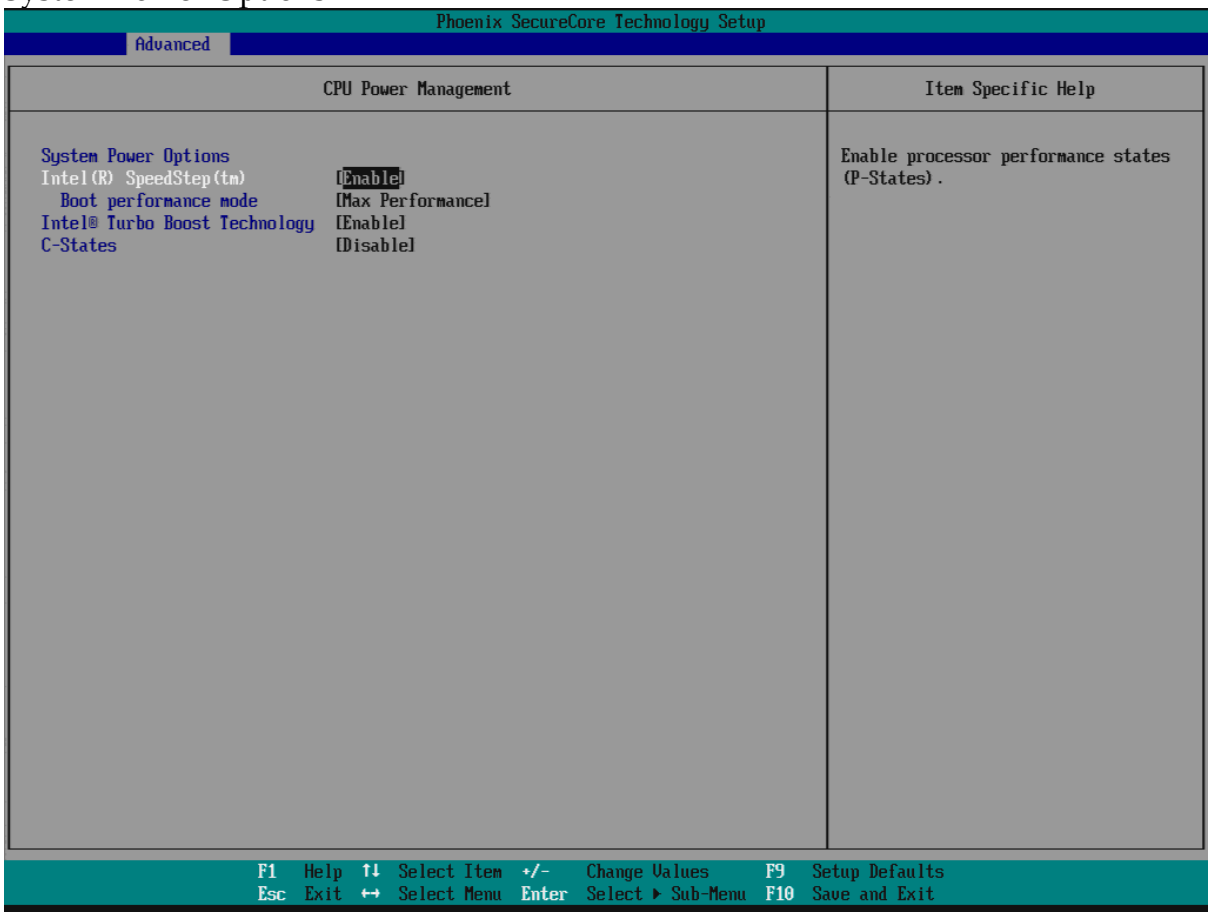
Enable/Disable TM1
Choices: Disable, Enable.

DTS

Enabled/Disable Digital Thermal Sensor
Choices: Disable, Enable.

CPU Power Management

System Power Options


Phoenix SecureCore Technology Setup
Advanced
CPU Power Management
Item Specific Help
System Power Options
Intel(R) SpeedStep(tm) [Enable]
Boot performance mode [Max Performance]
Intel® Turbo Boost Technology [Enable]
C-States [Disable]
Enable processor performance states (P-States).
F1 Help ↑↓ Select Item +/- Change Values F9 Setup Defaults
Esc Exit ↔ Select Menu Enter Select ▸ Sub-Menu F10 Save and Exit

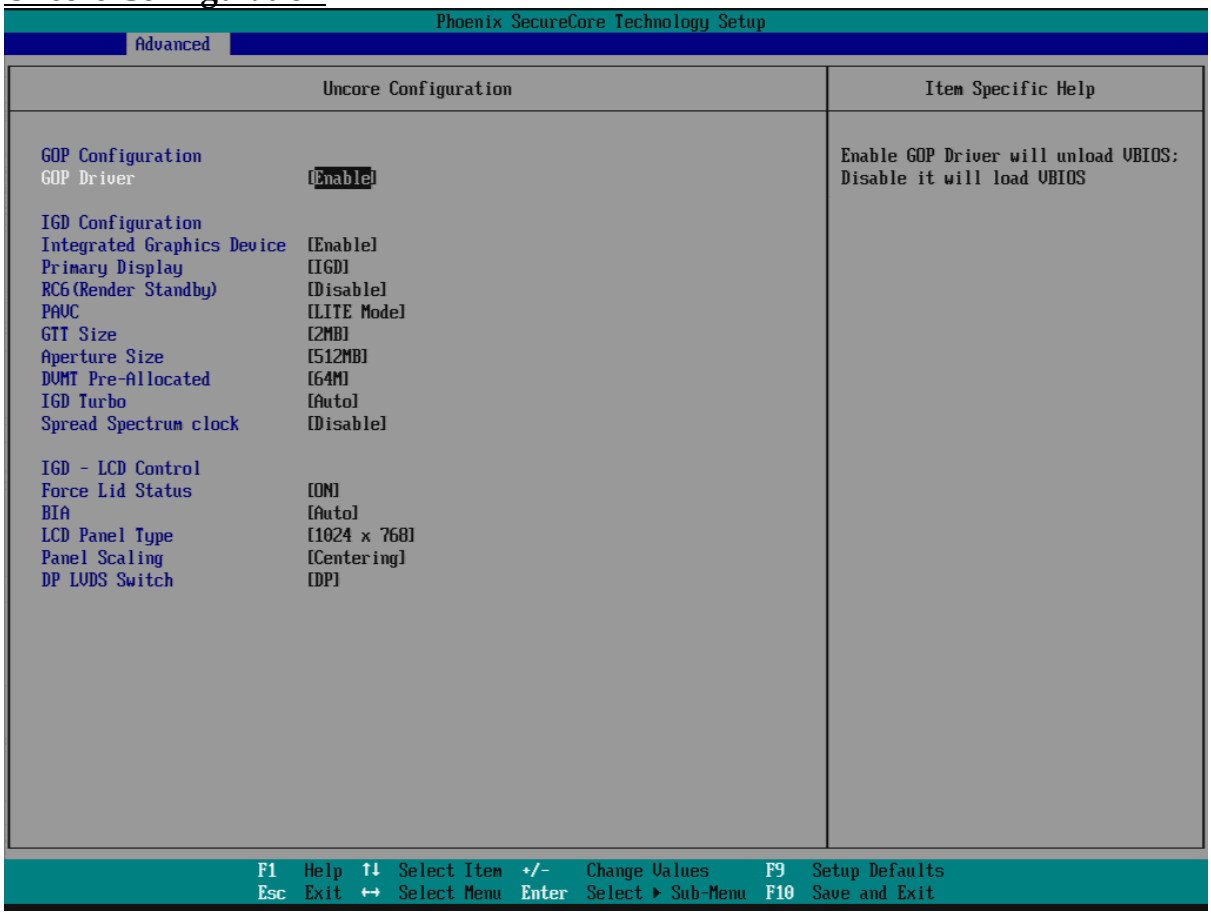
Intel® SpeedStep™
Enable processor performance status (P-Status)
Choices: Disabled, Enabled.

Boot performance mode
Select the performance state that the BIOS will set before OS handoff
Choices: Max Performance, Max Battery.

Intel® Turbo Boot Technology
Enable to automatically allow processor cores to run faster than the base operation frequency if it's operating below power, current, and temperature specification limits.
Choices: Disable, Enable.

C-States
Enable/Disable C States
Choices: Disable, Enable.

Uncore Configuration


Phoenix SecureCore Technology Setup
Advanced
Uncore Configuration
Item Specific Help
GOP Configuration
GOP Driver [Enable]
Enable GOP Driver will unload VBIOS; Disable it will load VBIOS
IGD Configuration
Integrated Graphics Device [Enable]
Primary Display [IGD]
RC6(Render Standby) [Disable]
PAVC [LITE Mode]
GTT Size [2MB]
Aperture Size [512MB]
DVMT Pre-Allocated [64M]
IGD Turbo [Auto]
Spread Spectrum clock [Disable]
IGD - LCD Control
Force Lid Status [ON]
BIA [Auto]
LCD Panel Type [1024 x 768]
Panel Scaling [Centering]
DP LVDS Switch [DP]
F1 Help ↑↓ Select Item +/- Change Values F9 Setup Defaults
Esc Exit ↔ Select Menu Enter Select ▸ Sub-Menu F10 Save and Exit

GOP Driver
Enable GOP Driver will unload VBIOS; Disable it will load VBIOS
Choices: Enable, Disable.

Integrated Graphic Device
Enable: Enable Integrated Graphics Device (IGD) when selected as the Primary Video Adapter. Disable: Always disable IGD
Choices: Disable, Enable.

Primary Display
Select which of IGD/PCI Graphics device should be Primary Display. Or select SG for switchable / Hybrid Gfx.
Choices: Auto, IGD, PCIe, SG.

RC6 (Rander Standby)
Check to enable render standby support
Choices: Enable, Disable.

PAVC
Enable/Disable Protected Audio Video control.
Choices: Disable, LITE Mode, SERPENT Mode.

GTT Size
Select the GTT Size
Choices: 1MB, 2MB.

Aperture Size
Select the Aperture Size
Choices: 128MB, 256MB, 512MB.

DVMT Pre-Allocated
Select DVMT 5.0 Pre-Allocated (Fixed) Graphics Memory sized used by the Internal Graphic Device
Choices: 32M, 64M, 96M, 128M, 160M, 192M, 224M, 256M, 288M, 320M, 352M, 384M,416M, 448M, 480M, 512M.

IGD Turbo
Select the IGD turbo feature, if auto selected, IGD turbo will only be enabled when SOC stepping is B0 or above.
Choices: Auto, Enable, Disable.

Spread Spectrum clock
Enable clock chip Spread Spectrum feature
Choices: Disable, Enable.

Force Lid States
For test: Force to set lid status as on or off
Choices: OFF, ON.

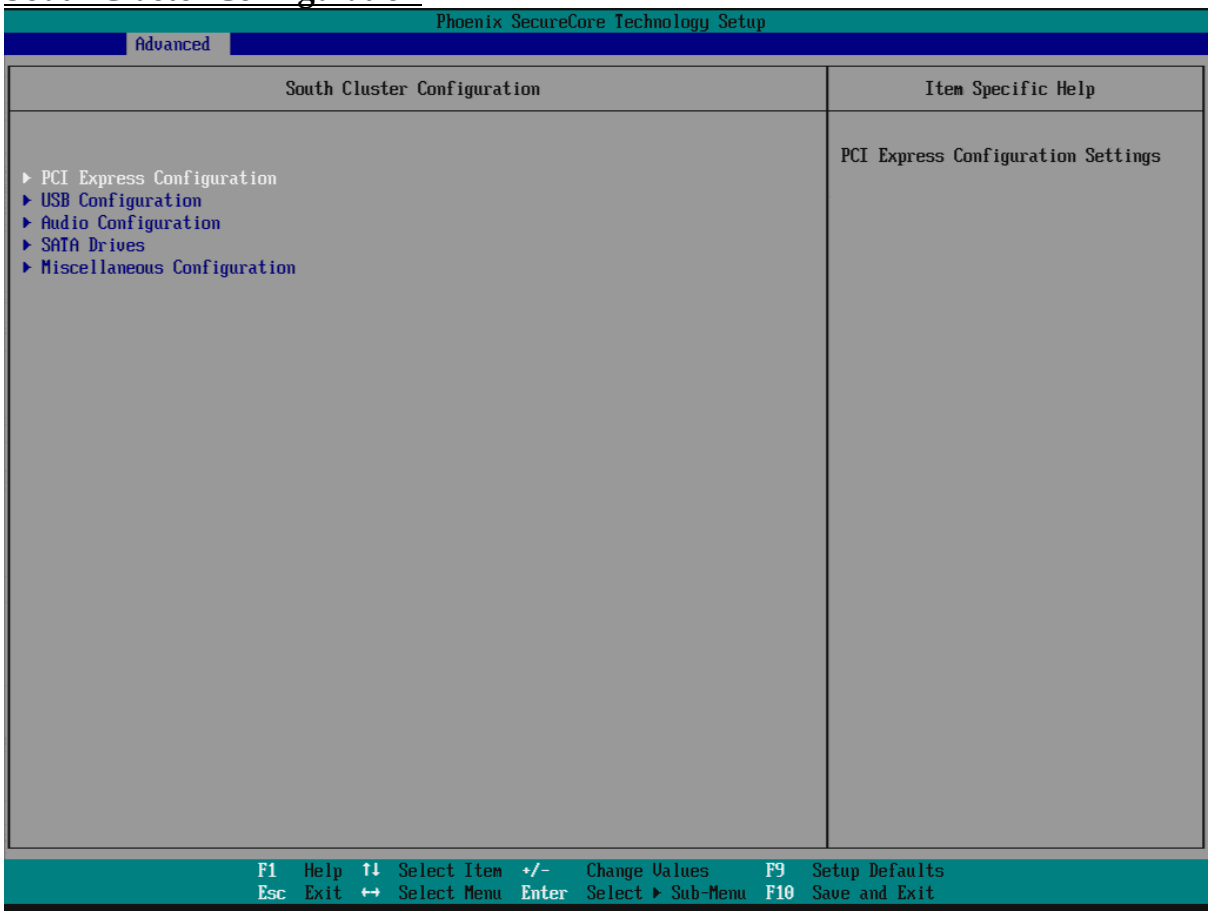
BIA
Auto: GMCH use VBIOS default, Level n: Enable with selected aggressiveness level.
Choices: Auto, Disable, Level 1, Level 2, Level 3, Level 4, Level 5.

LCD Panel type
Choices: 640 x 480, 800 x 600, 1025 x 768, 1280 x1024, 1400 x1050, 1600 x 1200, 1360 x768, 1680 x 1050, etc.

Panel Scaling
Select the LCD Panel scaling option used by Internal Graphic device
Choices: Auto, Centering, Stretching.

DP LVDS Switch
Choices: DP, LVDS.

South Cluster Configuration


Phoenix SecureCore Technology Setup
Advanced
South Cluster Configuration
Item Specific Help
PCI Express Configuration Settings
PCI Express Configuration
USB Configuration
Audio Configuration
SATA Drives
Miscellaneous Configuration
F1 Help ↑↓ Select Item +/- Change Values F9 Setup Defaults
Esc Exit ↔ Select Menu Enter Select ▸ Sub-Menu F10 Save and Exit

PCI Express Configuration

PCI Express Configuration Settings

Phoenix SecureCore Technology Setup
Advanced
PCI Express Configuration
Item Specific Help
Control the PCI Express Root Port.
PCI Express Root Port 1 [Enable]
PCI Express Root Port 2 [Enable]
F1 Help ↑↓ Select Item +/- Change Values F9 Setup Defaults
Esc Exit ↔ Select Menu Enter Select ▸ Sub-Menu F10 Save and Exit

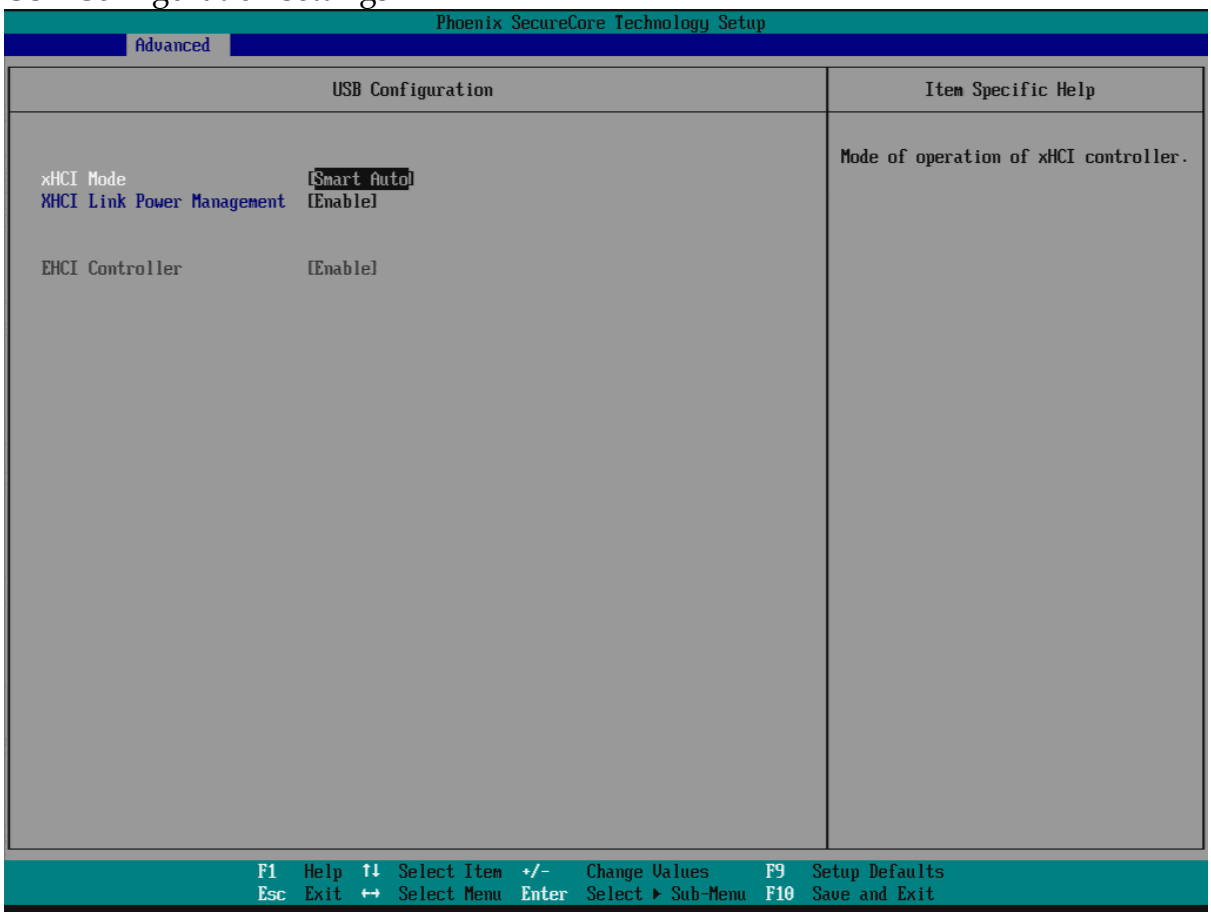
PCI Express Root Port #1 - #2

Control PCI Express root port

Choices: Enable, Disable.

USB Configuration

USB Configuration settings


Phoenix SecureCore Technology Setup
Advanced
USB Configuration
Item Specific Help
Mode of operation of xHCI controller.
xHCI Mode [Smart Auto]
XHCI Link Power Management [Enable]
EHCI Controller [Enable]
F1 Help ↑↓ Select Item +/- Change Values F9 Setup Defaults
Esc Exit ↔ Select Menu Enter Select ▸ Sub-Menu F10 Save and Exit

xHCI Mode

Mode of operation of xHCI controller
Choices: Smart Auto, Auto, Enable, Disable.

xHCI Link Power Management

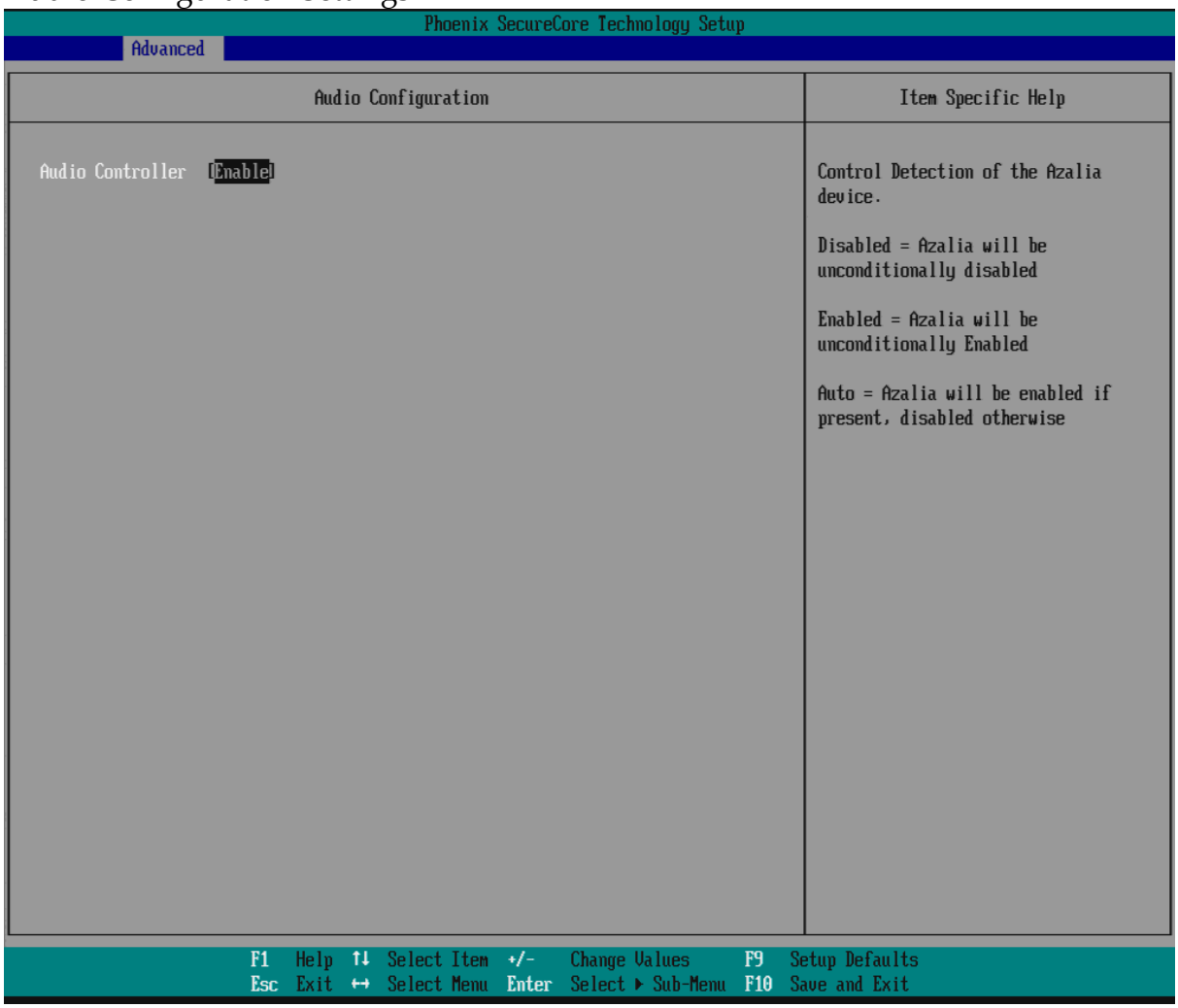
Enable/Disable xHCI Link Power Management
Choices: Enable, Disable.

EHCI Controller

Control the USB EHCI (USB 2.0) function.
Choices: Enable, Disable.

Audio Configuration

Audio Configuration Settings


Phoenix SecureCore Technology Setup
Advanced
Audio Configuration
Item Specific Help
Audio Controller [Enable]
Control Detection of the Azalia device.
Disabled = Azalia will be unconditionally disabled
Enabled = Azalia will be unconditionally Enabled
Auto = Azalia will be enabled if present, disabled otherwise
F1 Help ↑↓ Select Item +/- Change Values F9 Setup Defaults
Esc Exit ↔ Select Menu Enter Select ▸ Sub-Menu F10 Save and Exit

Audio Controller

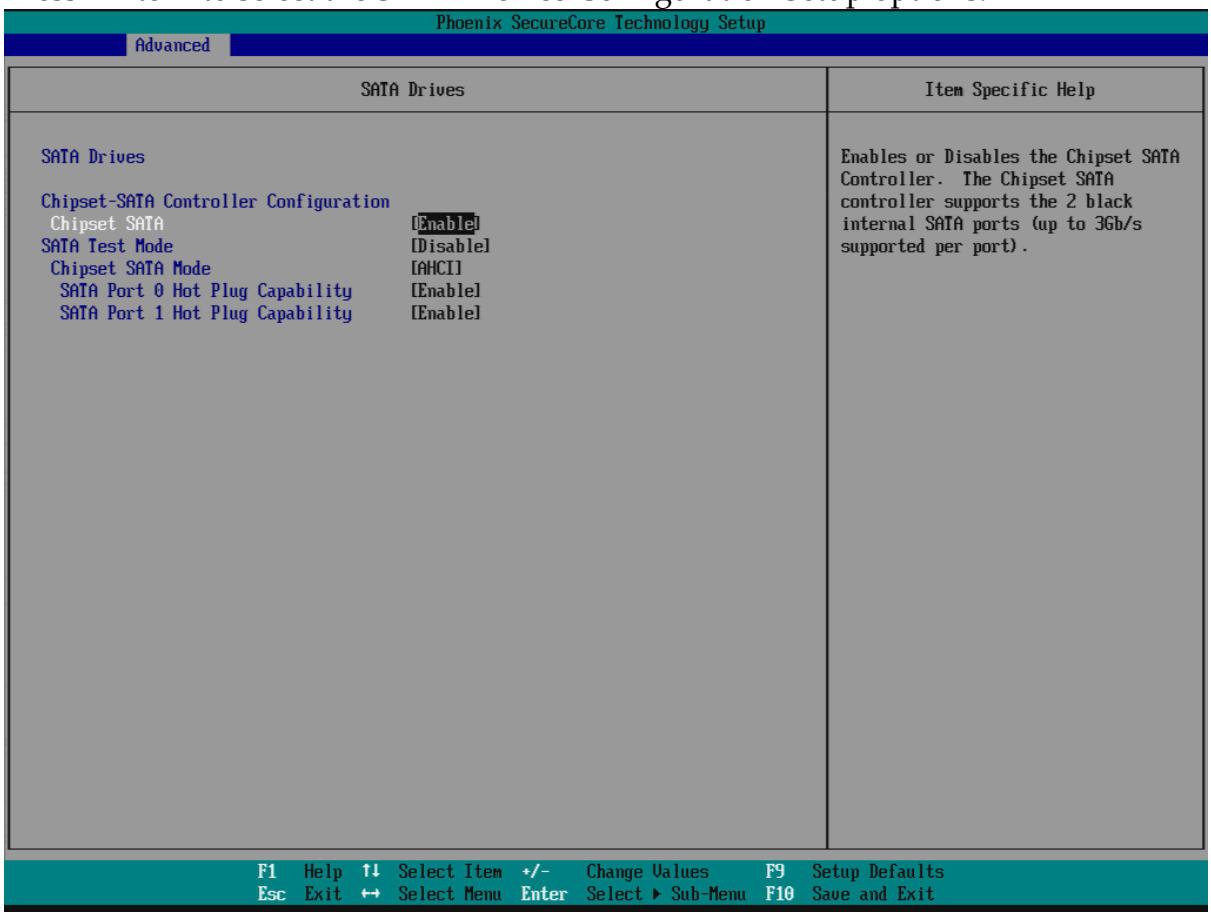
Control Detection of the Azalia device.

Disabled = Azalia will be unconditionally disabled.

Enabled = Azalia will be unconditionally enabled.
Auto = Azalia will be enabled if present. Disable otherwise
Choices: Disable, Enable.

SATA Drives

Press<Enter> to select the SATA Device Configuration Setup options.


Phoenix SecureCore Technology Setup
Advanced
SATA Drives
Item Specific Help
SATA Drives
Chipset-SATA Controller Configuration
Chipset SATA [Enable]
SATA Test Mode [Disable]
Chipset SATA Mode [AHCI]
SATA Port 0 Hot Plug Capability [Enable]
SATA Port 1 Hot Plug Capability [Enable]
Enables or Disables the Chipset SATA Controller. The Chipset SATA controller supports the 2 black internal SATA ports (up to 3Gb/s supported per port).
F1 Help ↑↓ Select Item +/- Change Values F9 Setup Defaults
Esc Exit ↔ Select Menu Enter Select ▸ Sub-Menu F10 Save and Exit

Chipset SATA

Enables or Disables the Chipset SATA Controller. The Chipset SATA controller supports the 2 black internal SATA ports (up to 3 Gb/s supported per port).
Choices: Enable, Disable.

SATA Test Mode

Test Mode Enable/Disable
Choices: Enable, Disable.

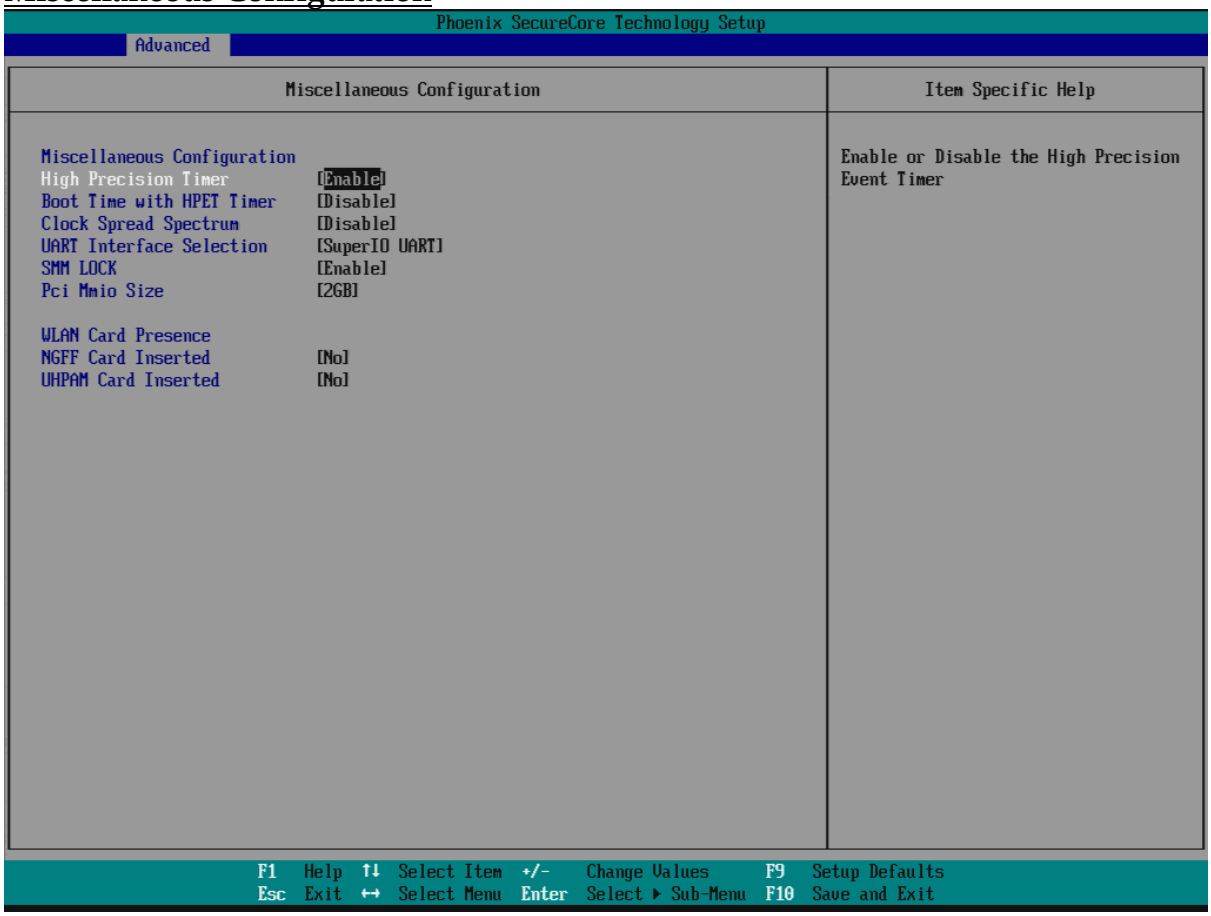
Chipset SATA Mode

IDE: Compatibility mode disables.
AHCI support: Supports advanced SATA features such as Native Command Queuing.
Warning: OS may not boot if this setting is changed after OS install.
Choices: IDE, AHCI.

Serial Port 0/1 Hot Plug Capability

If enabled, SATA port 0/1 will be reported as Hot Plug capable.
Choices: Enable, Disable.

Miscellaneous Configuration


Phoenix SecureCore Technology Setup
Advanced
Miscellaneous Configuration
Item Specific Help
Miscellaneous Configuration
High Precision Timer [Enable]
Boot Time with HPET Timer [Disable]
Clock Spread Spectrum [Disable]
UART Interface Selection [SuperIO UART]
SMM LOCK [Enable]
Pci Mmio Size [2GB]
WLAN Card Presence
NGFF Card Inserted [No]
UHPAM Card Inserted [No]
Enable or Disable the High Precision Event Timer
F1 Help ↑↓ Select Item +/- Change Values F9 Setup Defaults
Esc Exit ↔ Select Menu Enter Select ▸ Sub-Menu F10 Save and Exit

High Precision Timer

Enable or Disable the High Precision Event Timer.
Choices: Disable, Enable.

Boot Time with HPET Timer

Boot time calculation with High Precision Event Timer enable.
Choices: Disable, Enable.

Clock Spread Spectrum

Enable Clock Chip's Spread Spectrum feature.
Choices: Disable, Enable.

UART Interface Selection

Select which UART interface to use.
Choices: Intermal UART, SuperIO UART.

SMM LOCK

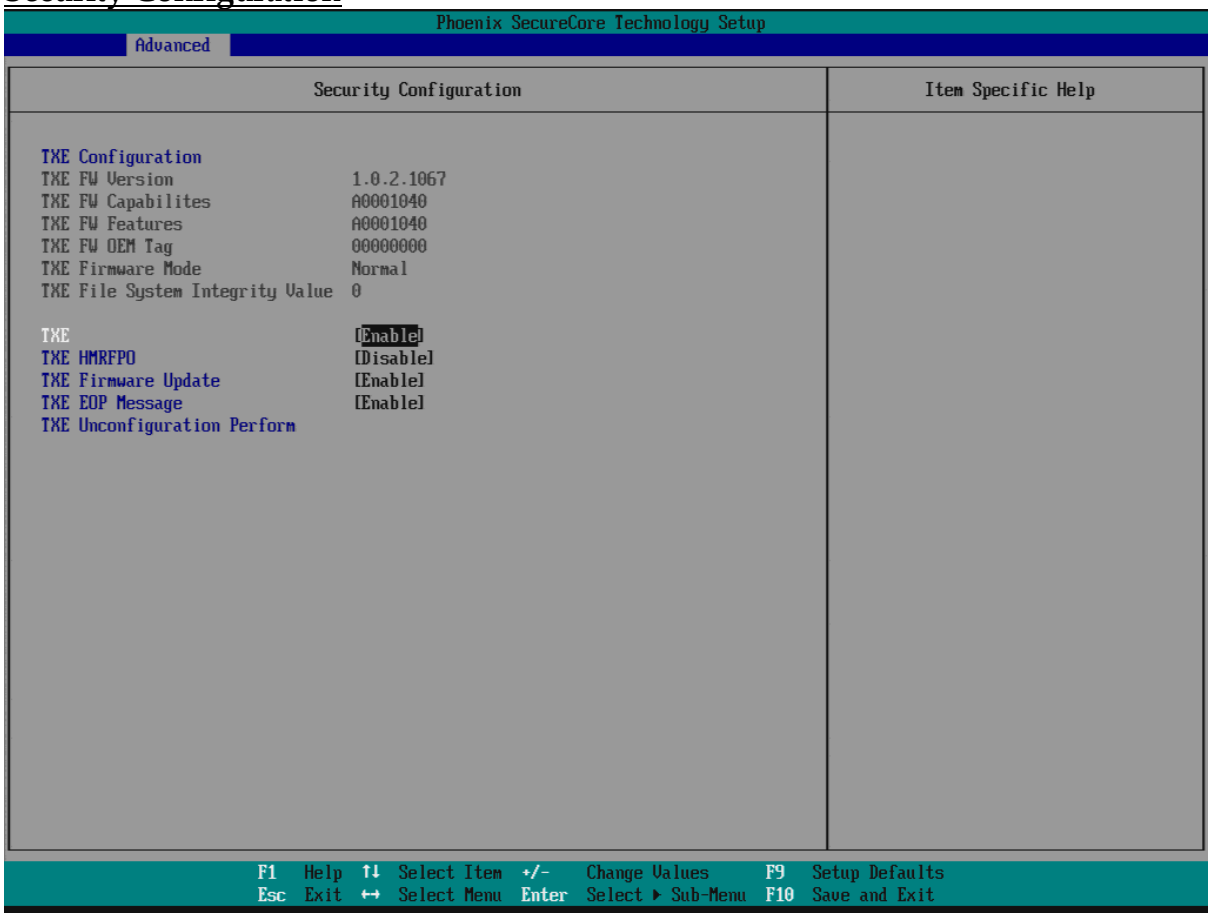
Enable/Disable SMM Lock feature. It will lock the SMRAM and unable load SMM driver any more.
Choices: Disable, Enable.

Pci Mmio Size
Pci Mmio Size.
Choices: 2 GB, 1.5 GB, 1.25 GB, 1GB.

NGFF Card Inserted
Set "YES" if NGFF Card is inserted.
Choices: No, Yes.

UHPAM Card Inserted
Set "YES" if UHPAM Card is inserted.
Choices: No, Yes.

Security Configuration


Phoenix SecureCore Technology Setup
Advanced
Security Configuration
Item Specific Help
TXE Configuration
TXE FW Version 1.0.2.1067
TXE FW Capabilites A0001040
TXE FW Features A0001040
TXE FW OEM Tag 00000000
TXE Firmware Mode Normal
TXE File System Integrity Value 0
TXE [Enable]
TXE HMRFPO [Disable]
TXE Firmware Update [Enable]
TXE EOP Message [Enable]
TXE Unconfiguration Perform
F1 Help ↑↓ Select Item +/- Change Values F9 Setup Defaults
Esc Exit ↔ Select Menu Enter Select ▸ Sub-Menu F10 Save and Exit

TXE
Choices: Disable, Enable.

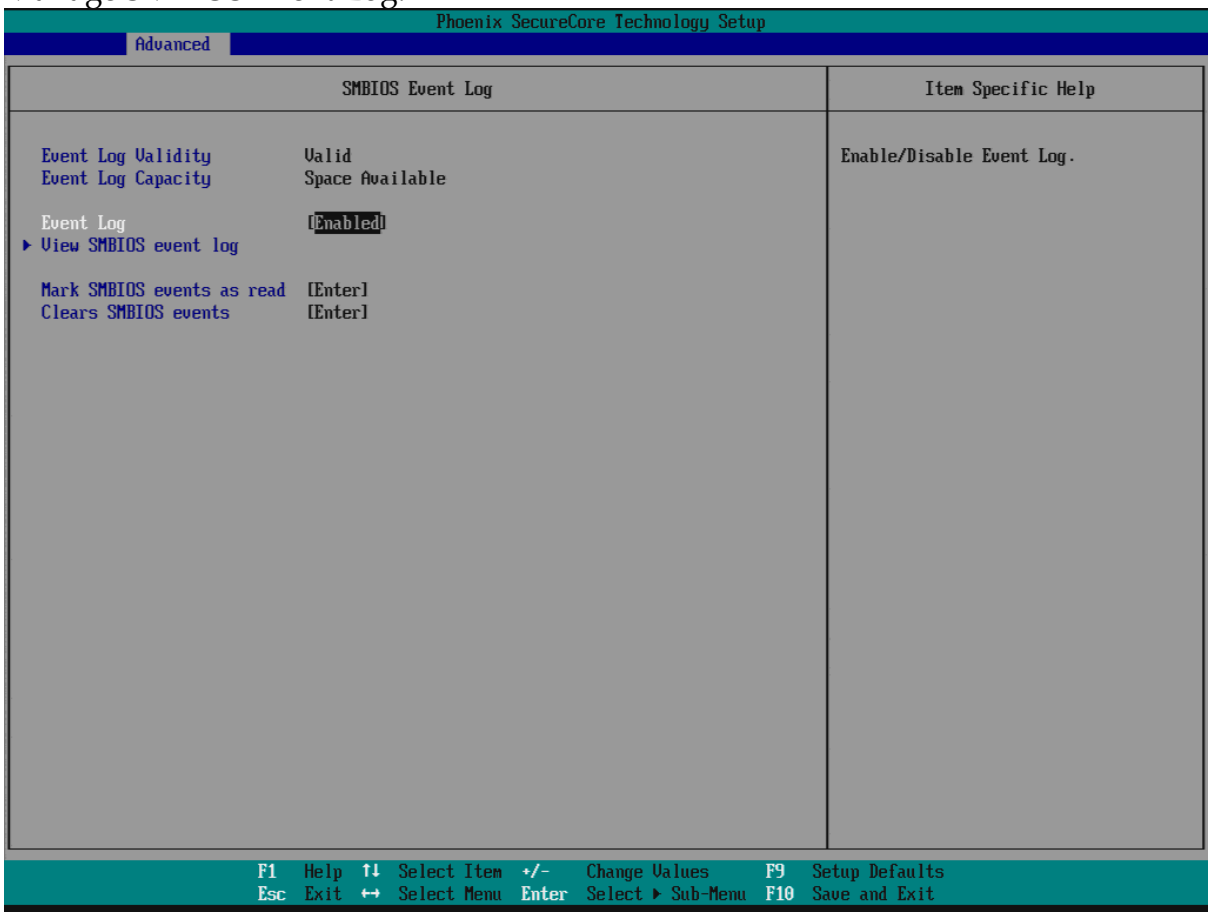
TXE HMRFPO
Choices: Disable, Enable.

TXE Firmware Update
Choices: Disable, Enable.

TXE EOP Message
Choices: Disable, Enable.

TXE Unconfiguration Perform
Choices: No, Yes.

SMBIOS Event Log
Manage SMBIOS Event Log.


Phoenix SecureCore Technology Setup
Advanced
SMBIOS Event Log
Item Specific Help
Event Log Validity Valid
Event Log Capacity Space Available
Event Log [Enabled]
View SMBIOS event log
Mark SMBIOS events as read [Enter]
Clears SMBIOS events [Enter]
Enable/Disable Event Log.
F1 Help ↑↓ Select Item +/- Change Values F9 Setup Defaults
Esc Exit ↔ Select Menu Enter Select ▸ Sub-Menu F10 Save and Exit

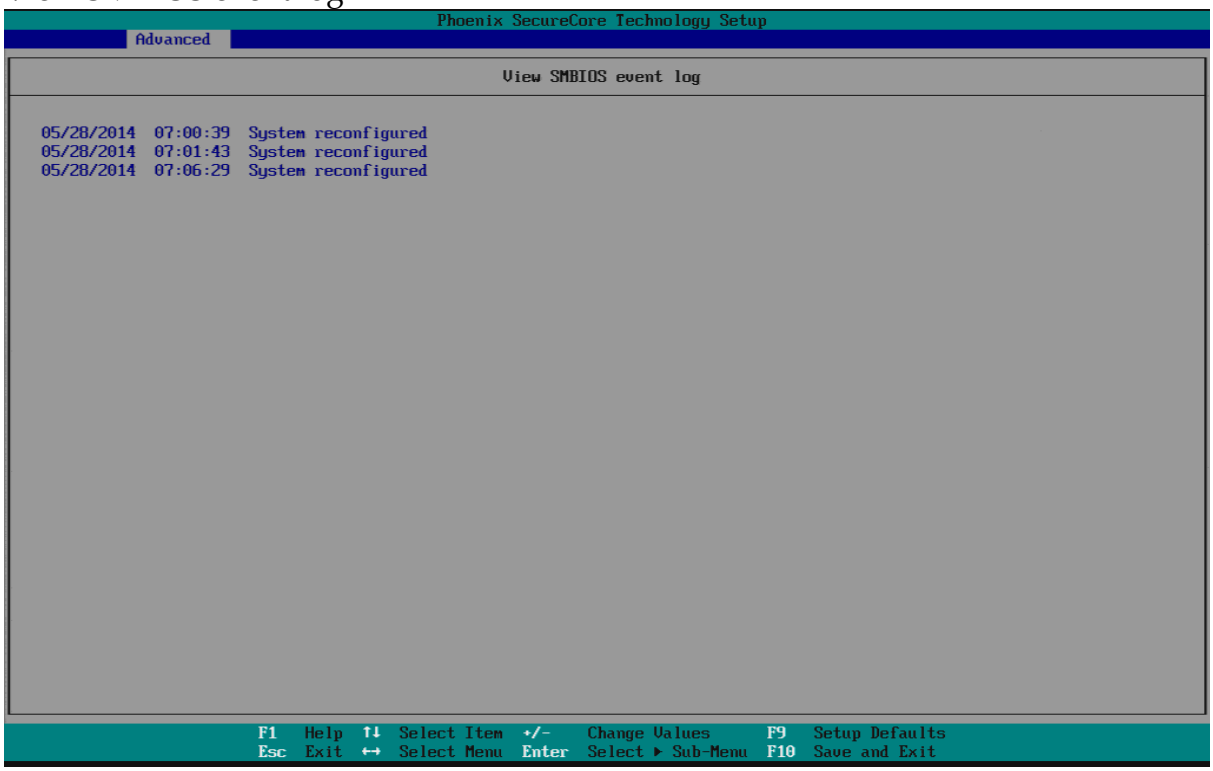
Event Log
Enable/Disable Event Log.
Choices: Disable, Enable.

Mark SMBIOS events as read
Mark SMBIOS events as read. Marked SMBIOS events won't be displayed.
Choices: No, Yes.

Clears SMBIOS events
Clears SMBIOS events.
Choices: No, Yes.

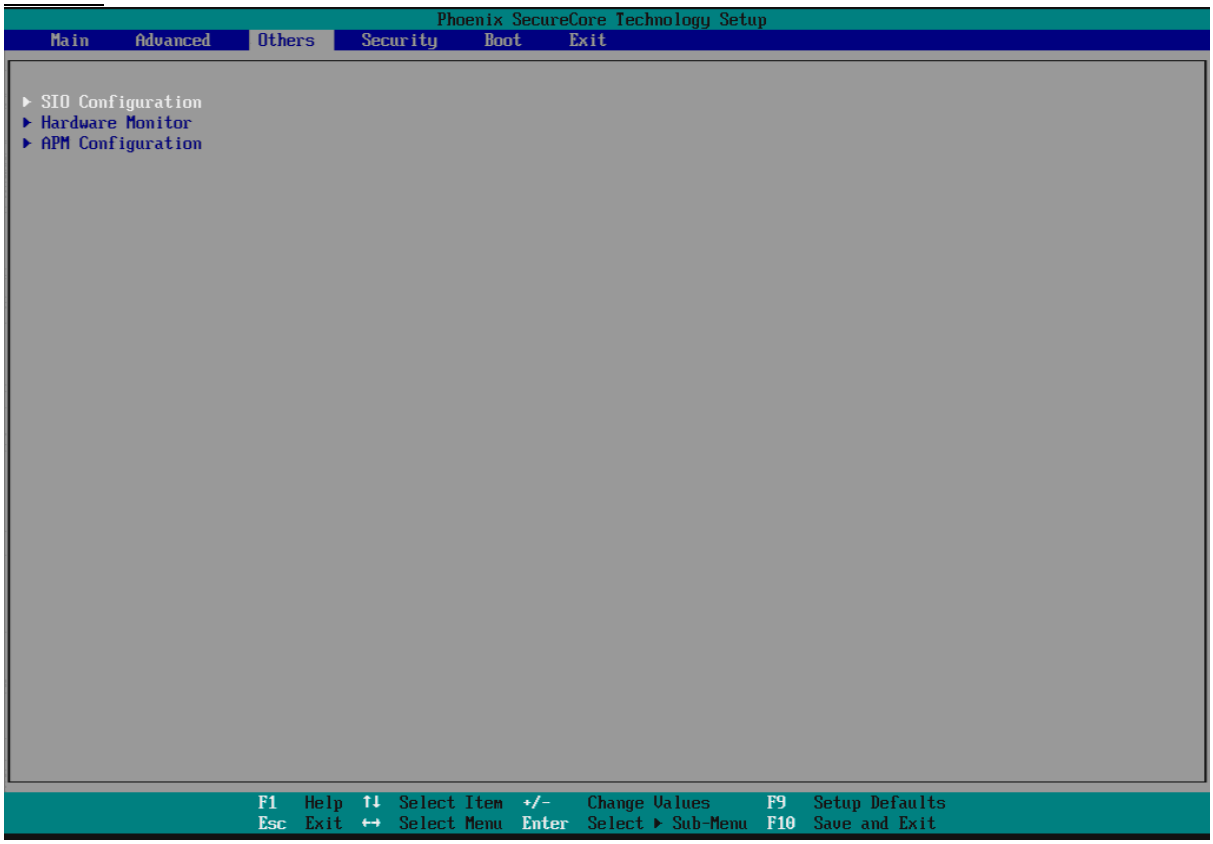
View SMBIOS event log

View SMBIOS event log

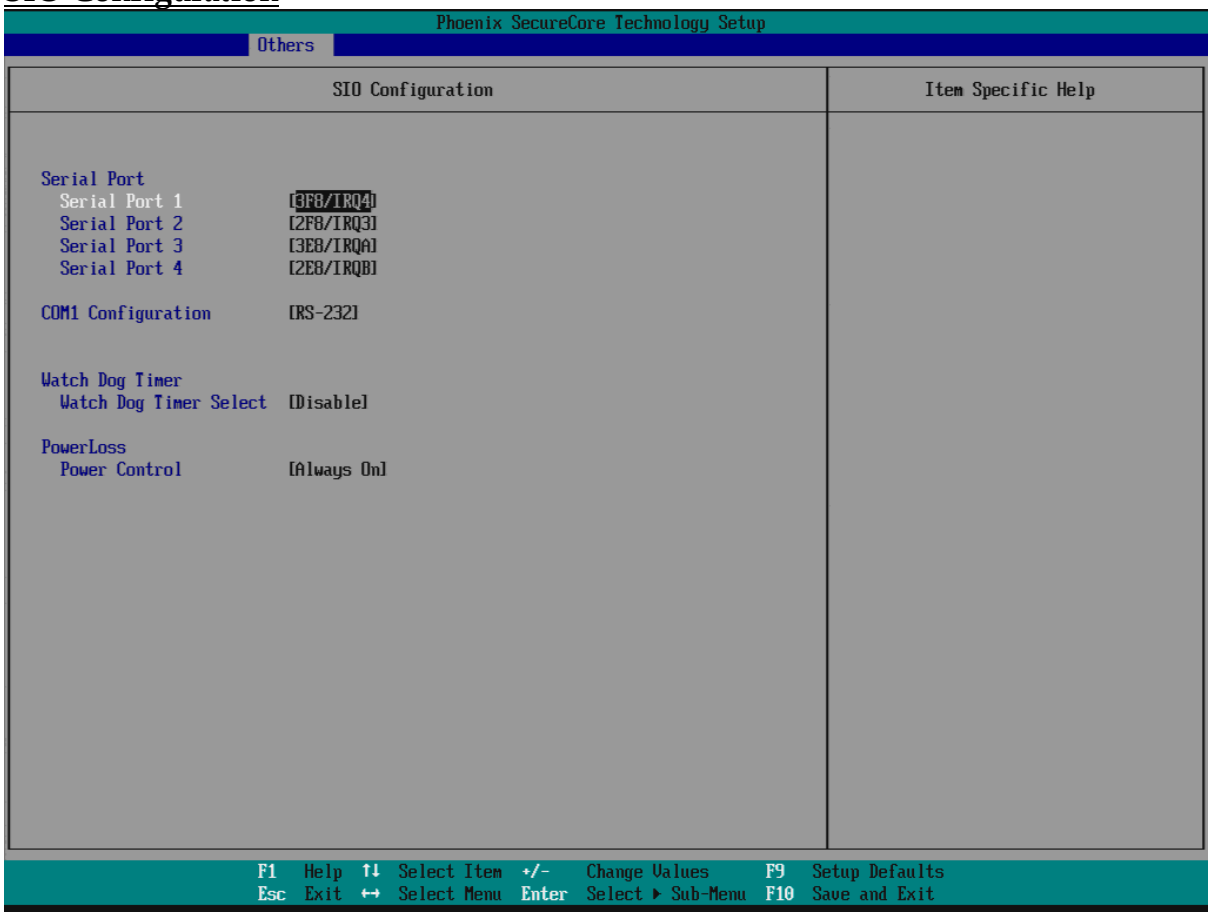

Phoenix SecureCore Technology Setup
Advanced
View SMBIOS event log
05/28/2014 07:00:39 System reconfigured
05/28/2014 07:01:43 System reconfigured
05/28/2014 07:06:29 System reconfigured
F1 Help ↑↓ Select Item +/- Change Values F9 Setup Defaults
Esc Exit ↔ Select Menu Enter Select ▸ Sub-Menu F10 Save and Exit

4.4 Others

Others


Phoenix SecureCore Technology Setup
Main Advanced Others Security Boot Exit
▸ SIO Configuration
▸ Hardware Monitor
▸ APM Configuration
F1 Help ↑↓ Select Item +/- Change Values F9 Setup Defaults
Esc Exit ↔ Select Menu Enter Select ▸ Sub-Menu F10 Save and Exit

SIO Configuration


Phoenix SecureCore Technology Setup
Others
SIO Configuration
Item Specific Help
Serial Port
Serial Port 1 [3F8/IRQ4]
Serial Port 2 [2F8/IRQ3]
Serial Port 3 [3E8/IRQA]
Serial Port 4 [2E8/IRQB]
COM1 Configuration [RS-232]
Watch Dog Timer
Watch Dog Timer Select [Disable]
PowerLoss
Power Control [Always On]
F1 Help ↑↓ Select Item +/- Change Values F9 Setup Defaults
Esc Exit ↔ Select Menu Enter Select ▸ Sub-Menu F10 Save and Exit

Serial Port 1
Choices: Disable, 3F8/IRQ4.

Serial Port 2
Choices: Disable, 2F8/IRQ3.

Serial Port 3
Choices: Disable, 3F8/IRQA.

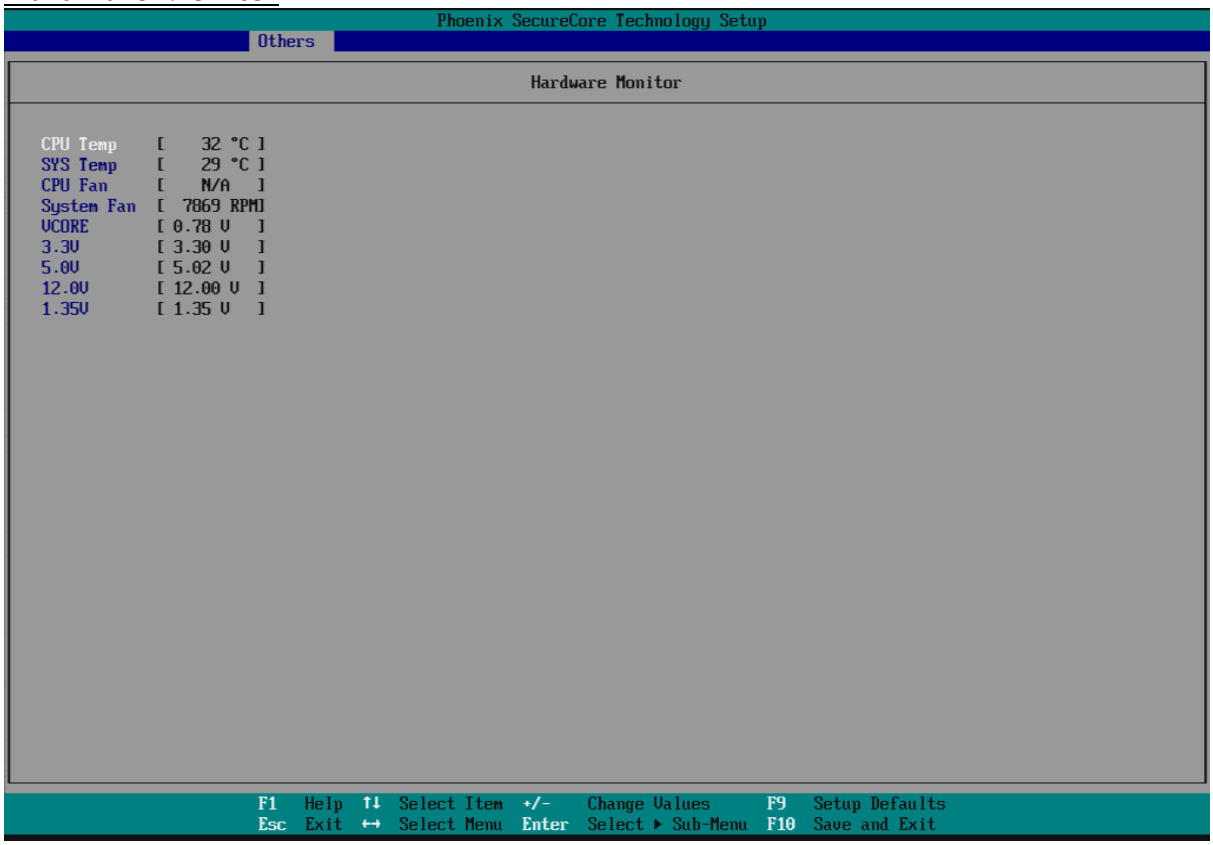
Serial Port 4
Choices: Disable, 2F8/IRQB.

COM1 Configuration
Select COM1 Configuration.
Choices: RS-232, RS-422, RS-485.

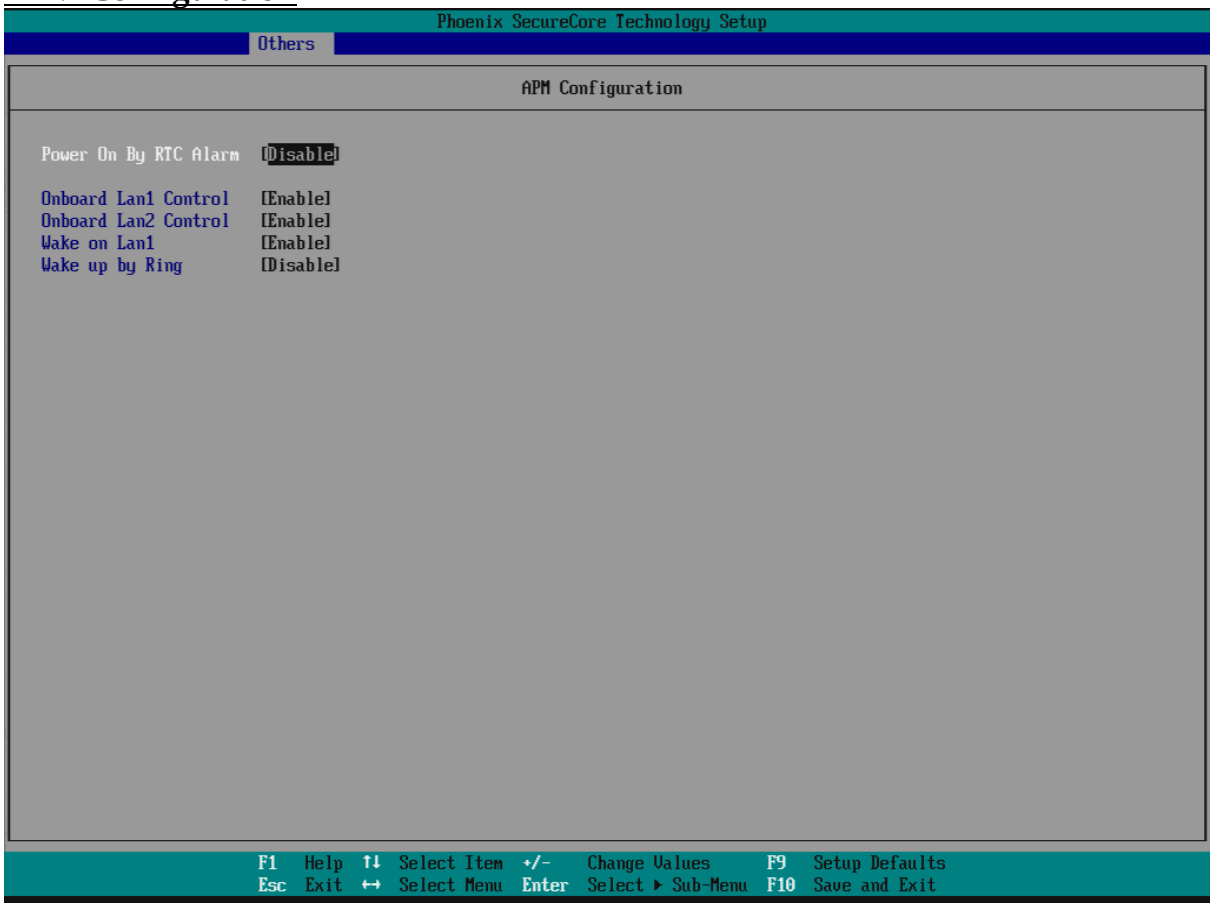
Watch Dog Timer Select
Choices: Disable, 15 secs, 30 secs, 1 min, 2 mins, 3 mins.

Power Control
Choices: Former State, Always On, Always Off.

Hardware Monitor


Phoenix SecureCore Technology Setup
Others
Hardware Monitor
CPU Temp [32 °C]
SYS Temp [29 °C]
CPU Fan [N/A]
System Fan [7869 RPM]
VCORE [0.78 V]
3.3V [3.30 V]
5.0V [5.02 V]
12.0V [12.00 V]
1.35V [1.35 V]
F1 Help ↑↓ Select Item +/- Change Values F9 Setup Defaults
Esc Exit ↔ Select Menu Enter Select ▸ Sub-Menu F10 Save and Exit

APM Configuration


Phoenix SecureCore Technology Setup
Others
APM Configuration
Power On By RTC Alarm [Disable]
Onboard Lan1 Control [Enable]
Onboard Lan2 Control [Enable]
Wake on Lan1 [Enable]
Wake up by Ring [Disable]
F1 Help ↑↓ Select Item +/- Change Values F9 Setup Defaults
Esc Exit ↔ Select Menu Enter Select ▸ Sub-Menu F10 Save and Exit

Power On By RTC Alarm
Choices: Disable, Enable.

Wake on LAN1
Choices: Disable, Enable.

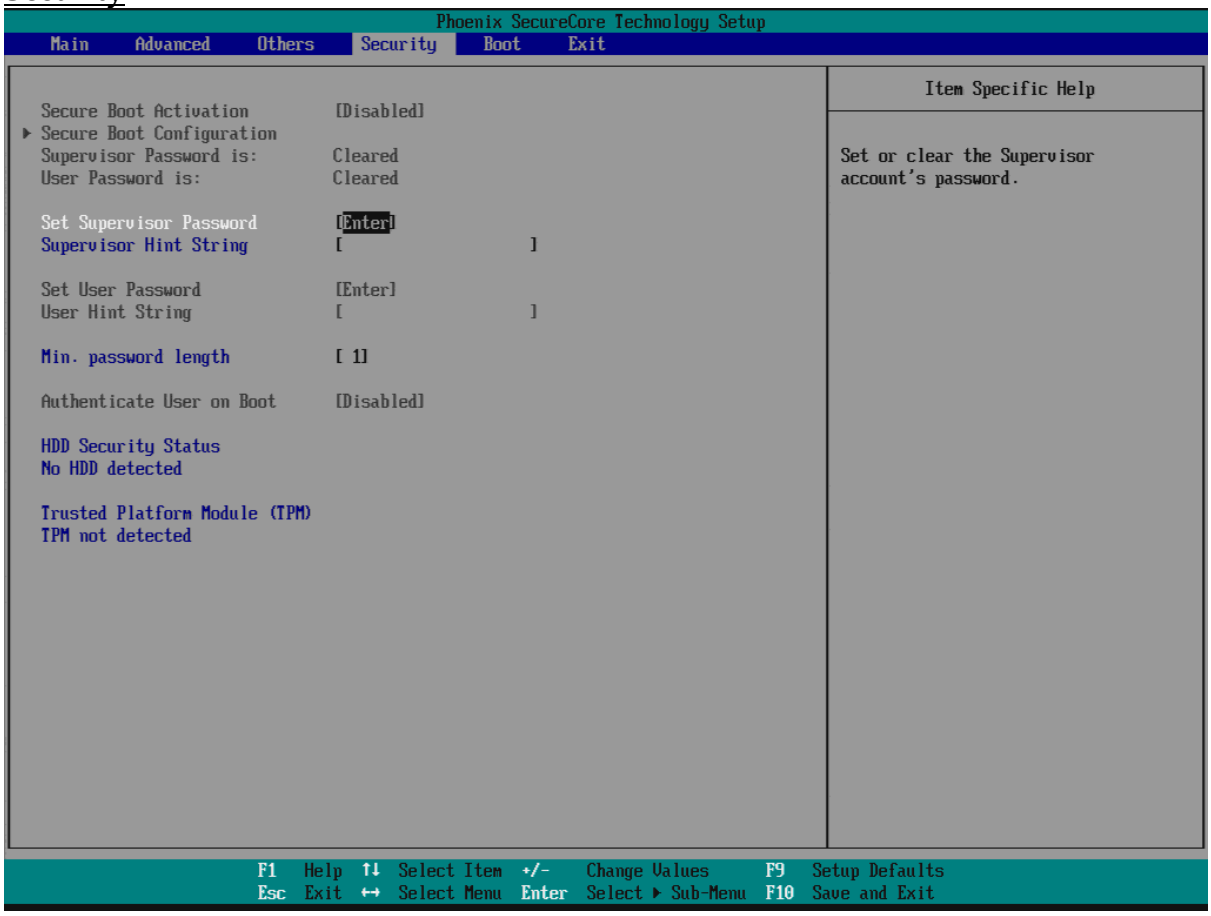
Wake on LAN2
Choices: Disable, Enable.

Wake on LAN1
Choices: Disable, Enable.

Wake up by Ring
Choices: Disable, Enable.

4.5 Securit

Security


Phoenix SecureCore Technology Setup
Main Advanced Others Security Boot Exit
Secure Boot Activation [Disabled]
Secure Boot Configuration
Supervisor Password is: Cleared
User Password is: Cleared
Set Supervisor Password [Enter]
Supervisor Hint String [ ]
Set User Password [Enter]
User Hint String [ ]
Min. password length [1]
Authenticate User on Boot [Disabled]
HDD Security Status
No HDD detected
Trusted Platform Module (TPM)
TPM not detected
Item Specific Help
Set or clear the Supervisor account's password.
F1 Help ↑↓ Select Item +/- Change Values F9 Setup Defaults
Esc Exit ↔ Select Menu Enter Select ▸ Sub-Menu F10 Save and Exit

Set Supervisor Password
Set or clear the Supervisor account's password.

Supervisor Hint String
Press Enter to type Supervisor Hint String.

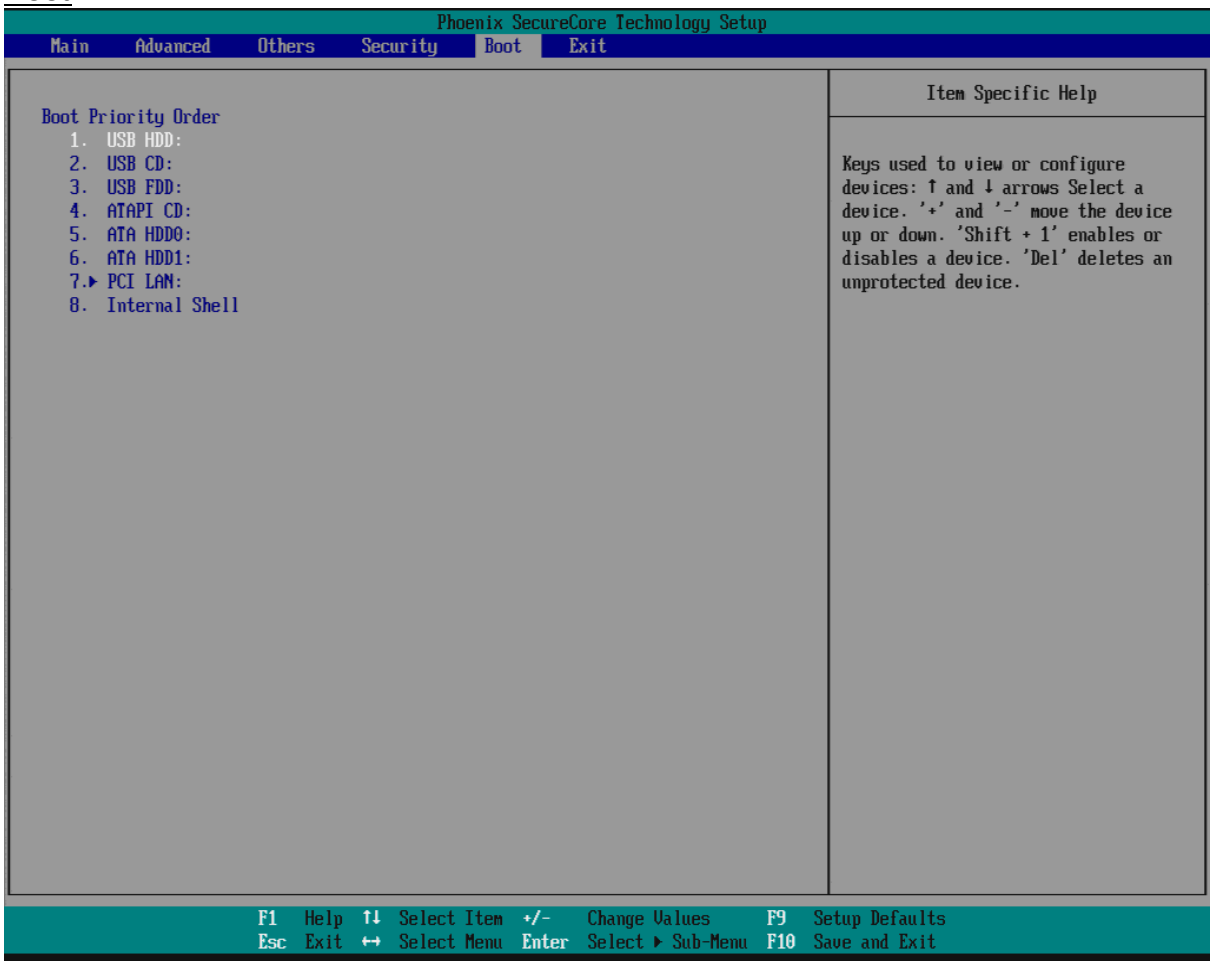
Set User Password (Show only)
Set or clear the User account' password.

Supervisor Hint String (Show only)
Press Enter to type User Hint String.

Min. password length
Set the minimum number of characters for password (1-20).
Choices: 0, 1.etc

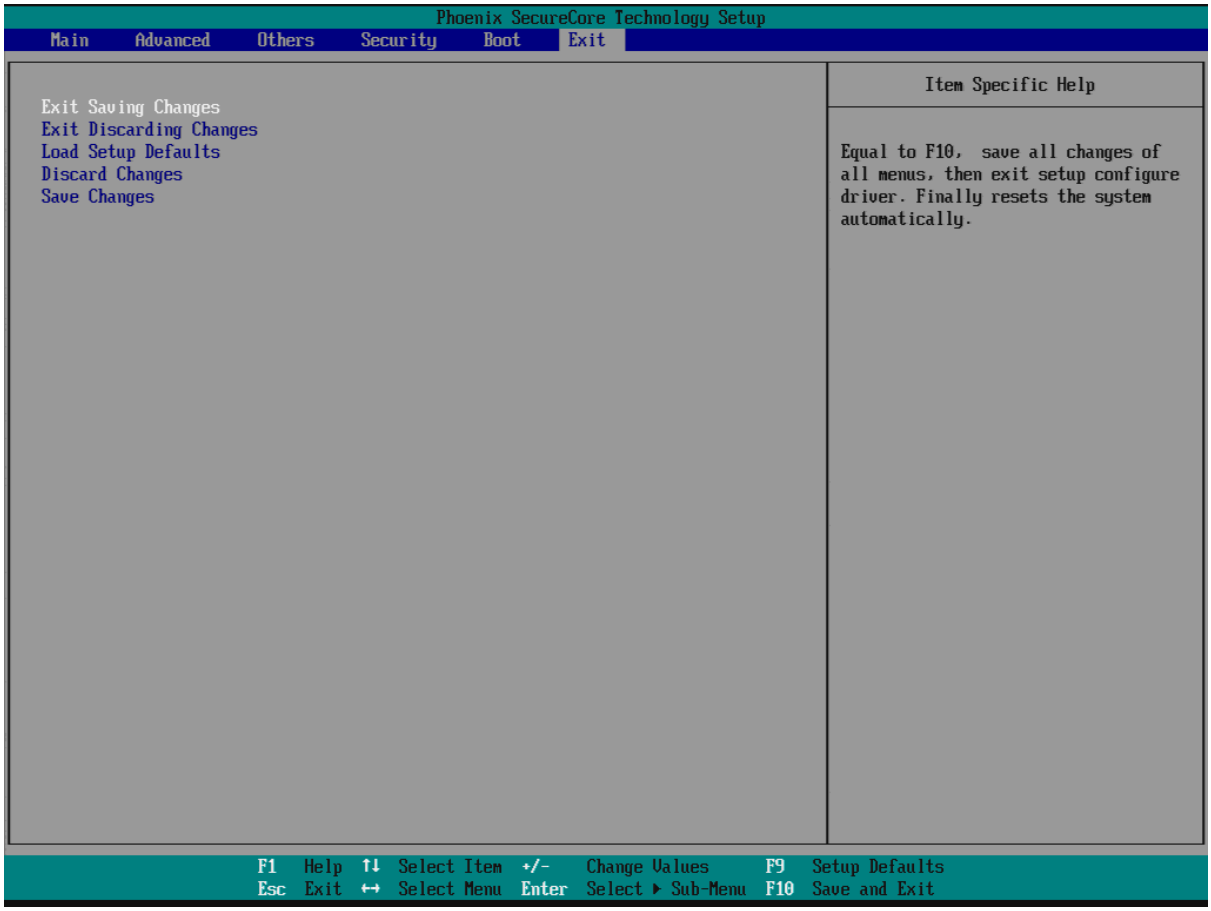
4.6 Boot

Boot


Phoenix SecureCore Technology Setup
Main Advanced Others Security Boot Exit
Boot Priority Order
1. USB HDD:
2. USB CD:
3. USB FDD:
4. ATAPI CD:
5. ATA HDD0:
6. ATA HDD1:
7. PCI LAN:
8. Internal Shell
Item Specific Help
Keys used to view or configure devices: ↑ and ↓ arrows Select a device. '+' and '-' move the device up or down. 'Shift + 1' enables or disables a device. 'Del' deletes an unprotected device.
F1 Help ↑↓ Select Item +/- Change Values F9 Setup Defaults
Esc Exit ↔ Select Menu Enter Select ▸ Sub-Menu F10 Save and Exit

Boot Priority Order
Keys used to view or configure devices: ↑ and ↓ arrows Select a device. '+' and '-'move the device up or down. 'Shift + 1' enabled or disables a device. 'Del' deletes an unprotected device.

4.7 Exit


Phoenix SecureCore Technology Setup
Main
Advanced
Others
Security
Boot
Exit
Exit Saving Changes
Exit Discarding Changes
Load Setup Defaults
Discard Changes
Save Changes
Item Specific Help
Equal to F10, save all changes of all menus, then exit setup configure driver. Finally resets the system automatically.
F1 Help ↑↓ Select Item +/- Change Values F9 Setup Defaults
Esc Exit ↔ Select Menu Enter Select ▸ Sub-Menu F10 Save and Exit

Exit Saving Changes
Equal to F10, save all changes of all menus, then exit setup configure driver. Finally resets the system automatically.

Exit Discarding Changes
Equal to ESC, never save changes, then exit setup configure driver.

Load Setup Defaults
Equal to F9. Load standard default values.

Discard Changes
Load the original value of this boot time. Not the default Setup value.

Save Changes
Save all changes of all menus, but do not reset system.

Chapter 5
Troubleshooting

This chapter provides a few useful tips to quickly get WADE-8079 running with success. As basic hardware installation has been addressed in Chapter 2, this chapter will primarily focus on system integration issues, in terms of BIOS setting, and OS diagnostics.

5.1 Hardware Quick Installation

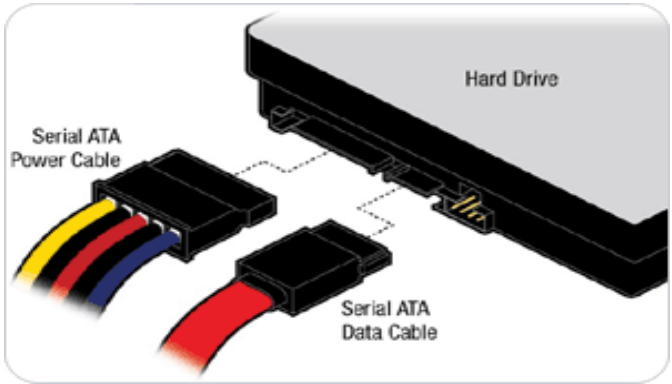
ATX Power Setting

Unlike other Single board computer, WADE-8079 supports a Power adaptor only. Therefore, there is no other setting that really needs to be set up. However, there is 12 / 24V DC Jack – J3 on the WADE-8079 board.

12 / 24V DC Jack – J3

Serial ATA

Unlike IDE bus, each Serial ATA channel can only connect to one SATA hard disk at a time;
The installation of Serial ATA is simpler and easier than IDE, because SATA hard disk doesn't require setting up Master and Slave, which can reduce mistake of hardware installation.



The WADE-8079 can support two SATA interface (SATAII, 3.0 Gb/s) with IDE or AHCI mode. It has two J16 & J19 SATA ports on the board.

5.2 BIOS Setting

It is assumed that users have correctly adopted modules and connected all the devices cables required before turning on ATX power. 204-pin DDR3L Memory, keyboard, mouse, SATA hard disk, VGA connector, power cable of the device, ATX accessories are good examples that deserve attention. With no assurance of properly and correctly accommodating these modules and devices, it is very possible to encounter system failures that result in malfunction of any device.

To make sure that you have a successful start with WADE-8079, it is recommended, when going with the boot-up sequence, to hit "F2" key and enter the BIOS setup menu to tune up a stable BIOS configuration so that you can wake up your system far well.

Loading the default optimal setting

When prompted with the main setup menu, please scroll down to "**Load Setup Defaults"**, press "**Enter**" and **select** "**Yes**" to load in default optimal BIOS setup. This will force your BIOS setting back to the initial factory configuration. It is recommended to do this so you can be sure the system is running with the BIOS setting that Portwell has highly endorsed. As a matter of fact, users can load the default BIOS setting any time when system appears to be unstable in boot up sequence.

5.3 Q&A

Information & Support

Question: I forget my password of system BIOS, what am I supposed to do?

Answer:

You can switch off your power supply then find the JP6 to set it from 1-2 short to 2-3 short and wait 5 seconds to clean your password then set it back to 1-2 short to switch on your power supply.

JP6: CMOS Clear Pin Header

JP6	Function
1-2 Short	Normal Operation ★
2-3 Short	Clear CMOS Contents

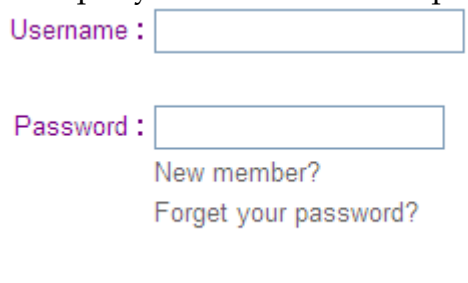
Question: How to update the BIOS file of the WADE-8079?

Answer:

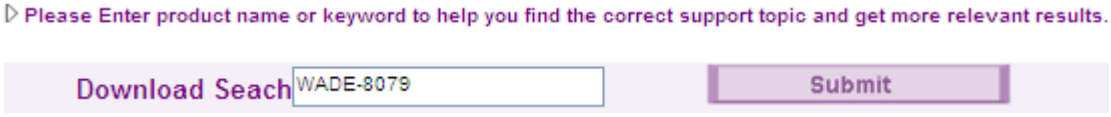
1. Please visit web site of the **Portwell Download Center** as below hyperlink
http://www.portwell.com.tw/support/download_center.php

Then you must register an account first.
http://www.portwell.com.tw/member/newmember.php (The E-Mail box should be an existing Company email address that you check regularly.)

2. Input your User name and password to log in the download center.



3. Select the **"Search download"** to input the keyword **"WADE-8079"**.

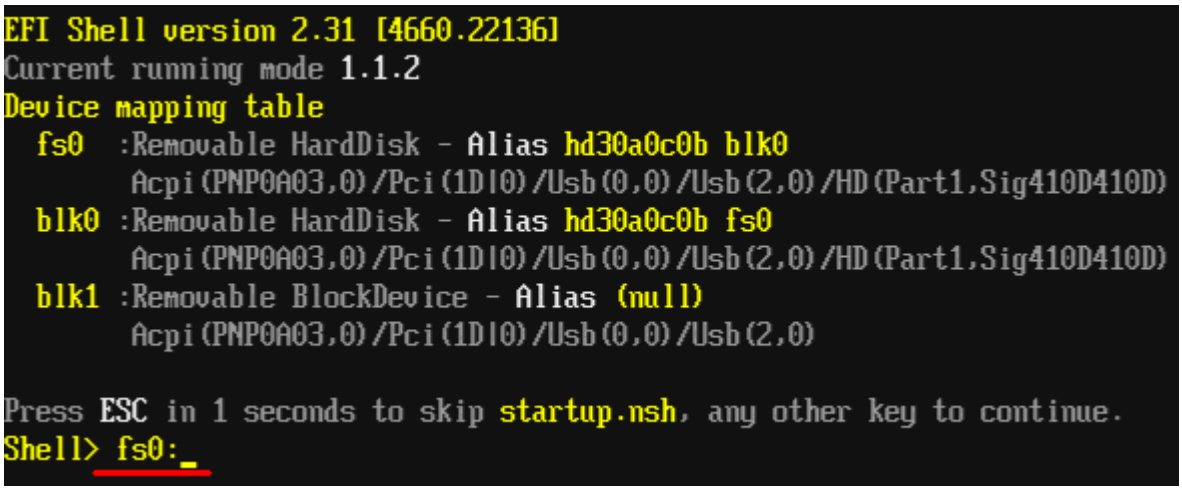

Please Enter product name or keyword to help you find the correct support topic and get more relevant results.
Download Seach
WADE-8079
Submit

4. Find the **"BIOS"** page to download the ROM file and flash utility.

5. Execute the zip file to root of the bootable USB pen drive. You can get the **"Shell Flash 32.efi", "temp.bin", "Update.nsh"** three files.

6. Insert your USB pen drive in USB port of the WADE-8079 board and power-on.

7. Boot to EFI-Shell mode then input the **"fs0:"** command to switch to the root of the USB pen drive.


EFI Shell version 2.31 [4660.22136]
Current running mode 1.1.2
Device mapping table
fs0 :Removable HardDisk - Alias hd30a0c0b blk0
Acpi(PNP0A03,0)/Pci(1D|0)/Usb(0,0)/Usb(2,0)/HD(Part1,Sig410D410D)
blk0 :Removable HardDisk - Alias hd30a0c0b fs0
Acpi(PNP0A03,0)/Pci(1D|0)/Usb(0,0)/Usb(2,0)/HD(Part1,Sig410D410D)
blk1 :Removable BlockDevice - Alias (null)
Acpi(PNP0A03,0)/Pci(1D|0)/Usb(0,0)/Usb(2,0)
Press ESC in 1 seconds to skip startup.nsh, any other key to continue.
Shell> fs0:

8. Enter the folder you save update image by command [cd "folder name"], in this case is [cd update]
9. Type the "**update**" command to start flash BIOS processes.

```
EFI Shell version 2.31 [4660.22136]
Current running mode 1.1.2
Device mapping table
  fs0  :Removable HardDisk - Alias hd30a0c0b blk0
        Acpi(PNP0A03,0)/Pci(1D|0)/Usb(0,0)/Usb(2,0)/HD(Part1,Sig410D410D)
  blk0 :Removable HardDisk - Alias hd30a0c0b fs0
        Acpi(PNP0A03,0)/Pci(1D|0)/Usb(0,0)/Usb(2,0)/HD(Part1,Sig410D410D)
  blk1 :Removable BlockDevice - Alias (null)
        Acpi(PNP0A03,0)/Pci(1D|0)/Usb(0,0)/Usb(2,0)

Press ESC in 1 seconds to skip startup.nsh, any other key to continue.
Shell> fs0:

fs0:\> cd update

fs0:\update> update_
```

10. When it finished all update processes, please reboot your system around 5 seconds.
11.

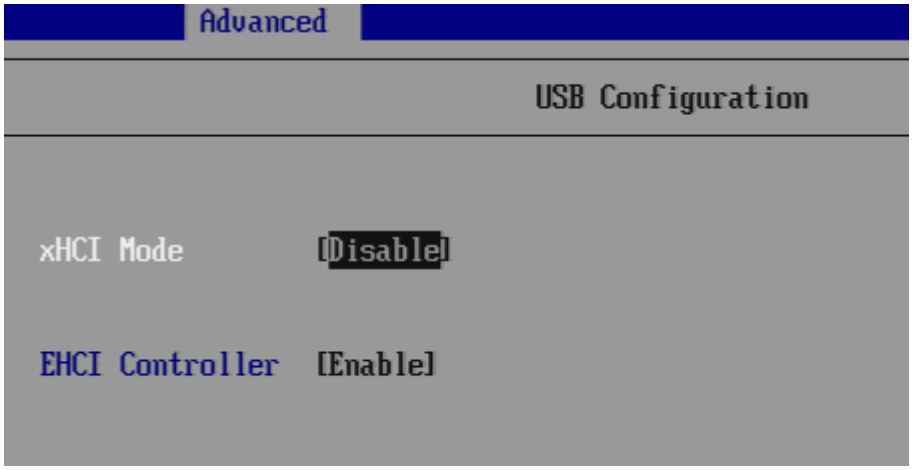
```
- Programming Flash [0x73A000]    4KB of    4KB - 100% complete.
- Erasing Flash Block [0x752000] - 100% complete.
- Programming Flash [0x752000]    4KB of    4KB - 100% complete.
- Erasing Flash Block [0x758000] - 100% complete.
- Programming Flash [0x758000]    4KB of    4KB - 100% complete.
- Erasing Flash Block [0x75B000] - 100% complete.
- Programming Flash [0x75B000]    4KB of    4KB - 100% complete.
- Erasing Flash Block [0x75D000] - 100% complete.
- Programming Flash [0x75D000]    4KB of    4KB - 100% complete.
- Erasing Flash Block [0x77F000] - 100% complete.
- Programming Flash [0x77F000]  124KB of  124KB - 100% complete.
- Erasing Flash Block [0x7EE000] - 100% complete.
- Programming Flash [0x7EE000]   36KB of   36KB - 100% complete.
- Verifying Flash [0x800000] 8192KB of 8192KB - 100% complete.
RESULT: The data is identical.

FPT Operation Passed


fs0:\update> _
```

12. Please press the "**F2**" key to BIOS setup menu to select "**Load Setup Defaults**" and then select "**Exit Saving Changes**" option to finish all BIOS flash processes.

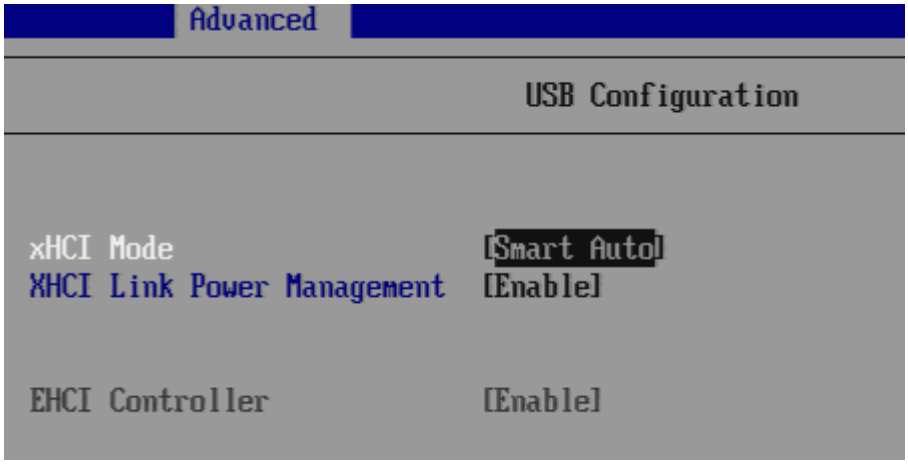
Question: How to install USB 3.0 Windows 7 driver of the WADE-8079?

Answer:
Because of the WADE-8079 is Bay Trail platform, USB 3.0 driver need to use the other method to install USB 3.0 driver on windows 7, but windows 8 OS doesn't.

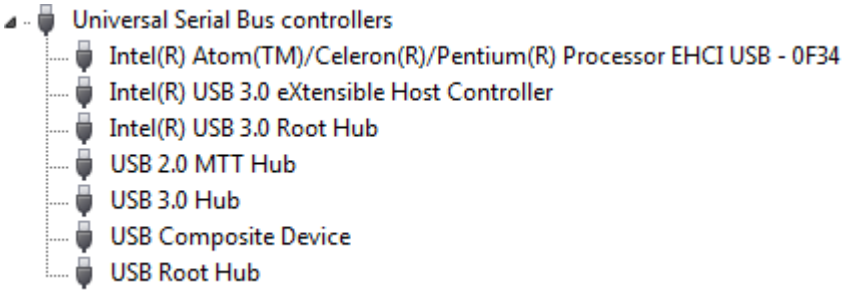
Step1. You must disable the XHCI mode and enable the EHCI Controller from BIOS setup menu before install windows 7.



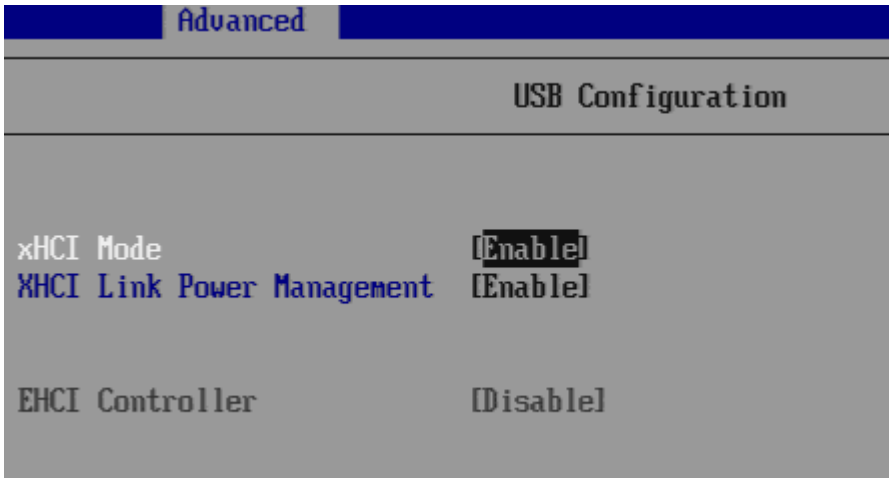
Step2. After complete the Windows 7 installation then change the BIOS setting of XHCI mode to [Smart Auto] and keep EHCI Controller as [Enable].



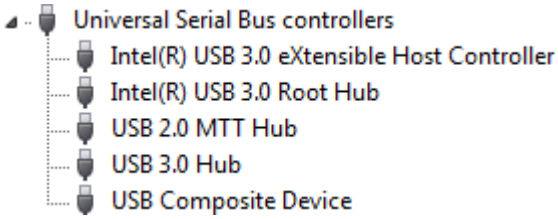
Step3. Then Boot into windows 7 and install the USB 3.0 driver.


Universal Serial Bus controllers
Intel(R) Atom(TM)/Celeron(R)/Pentium(R) Processor EHCI USB - 0F34
Intel(R) USB 3.0 eXtensible Host Controller
Intel(R) USB 3.0 Root Hub
USB 2.0 MTT Hub
USB 3.0 Hub
USB Composite Device
USB Root Hub

Step4. After USB 3.0 driver installed completely, you have to change the BIOS setting of XHCI mode to [Enable] and EHCI Controller to [Disable], and then complete the procedure.



Complete the USB 3.0 driver installation.


Universal Serial Bus controllers
Intel(R) USB 3.0 eXtensible Host Controller
Intel(R) USB 3.0 Root Hub
USB 2.0 MTT Hub
USB 3.0 Hub
USB Composite Device

Following the above 4 steps, USB 3.0 can work well on Windows 7 OS.

Note:
Please visit our Download Center to get the Catalog, User manual, BIOS, and driver files.
http://www.portwell.com.tw/support/download_center.php

If you have other additional technical information or request which is not covered in this manual, please fill in the technical request form as below hyperlink.
http://www.portwell.com.tw/support/problem_report.php

We will do our best to provide a suggestion or solution for you.

Thank you.